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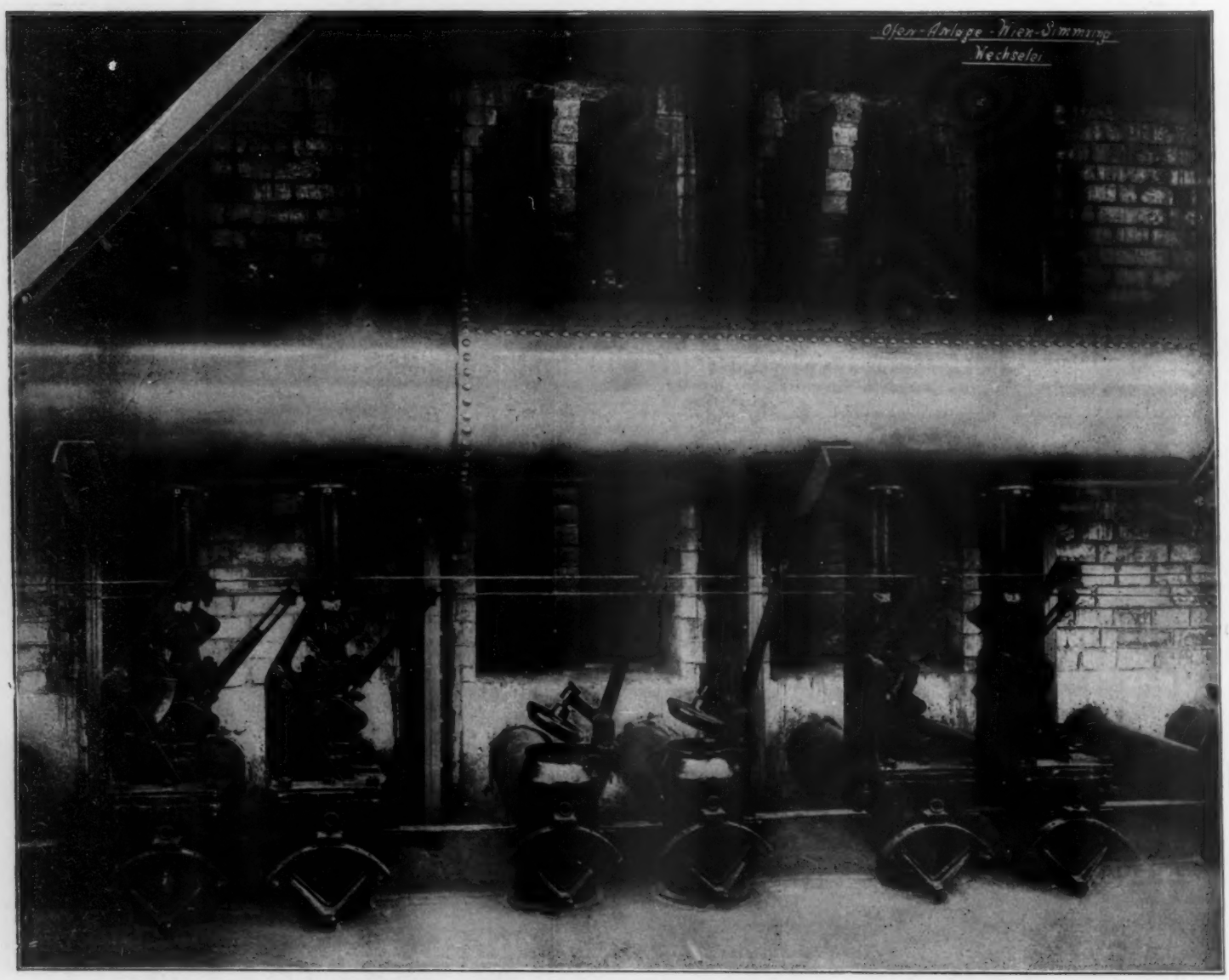

KOPPERS REGENERATORS—GAS PLANT AT VIENNA.

H. KOPPERS COMPANY,

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5 S. Wabash Avenue, - - - CHICAGO, ILLINOIS.

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The Astoria Plant of the New York Consolidated Gas Company.

[Prepared for the JOURNAL, by MR. C. C. SIMPSON, JR.]

CHAPTER IV.

December 3d, 1906, was an eventful one at Astoria, for on that day the first coal gas was made in the inclined retort house. Two weeks later, on December 17th, the horizontal house was put in commission. Our children's grandchildren should certainly be able to cook, light and heat, and do various other useful things, with Astoria gas, for the plant has been built as much for them as for the present generation, and, if you would care to know the builders, here they are. In Fig. 57 is shown a group photograph of the men responsible for the design and erection of the first coal gas unit.

But, while gasmaking had become an established fact, do not infer that there was any cessation of construction work, for the plant was still a long way from completion. Temporary arrangements had been made for unloading and storing enough coal to supply the first unit for a time, but in these days of frequent strikes it is necessary to provide for a reserve supply sufficient to insure against any possibility of a shutdown. The fact that New York city's gas supply has *never* failed was borne in mind when the Astoria plant was designed.

Early in the spring of 1904 work was started on two rapid unloading towers, designed to remove the coal from scows at the north shore dock. The location of these towers is indicated by elongated diamonds on Fig. 2, at co-ordinates Z-11-12. Fig. 58 is a view of the west tower, steel, partially erected; and Fig. 59, taken some time later, shows the two towers completed—one of the 2-ton grab buckets having just been opened over the coal pile. Between the legs of each tower are 50-ton storage bins, with suitable hoppers for unloading cars run underneath, and the towers are also enabled, by means of long cantilever arms, to store coal on the ground over a space 715 feet long and 100 feet in width, making a total storage capacity of over 50,000 gross tons. The towers are designed to travel on rails along the dock front at a maximum speed of 150 feet per minute. The outboard cantilever or apron allows the grab bucket to work 53 feet out from the dock front, so that coal boats can be unloaded in almost any position and quite rapidly (150 tons per hour for each tower), all power for hoisting, trolley and tower travel being furnished by three 200-horse power electric motors.

Shortly after these unloading towers had been erected, work was started on a 600-foot storage bridge, designed to pick up the coal deposited by the unloaders and distribute it over the main storage area. Fig. 60 shows the erection of steel work for the south tower of this bridge, and if any uncertainty exists as to what a coal storage bridge is, Fig. 61 is a photograph of the complete structure, taken from a point directly west of the south tower. This bridge is really of the nature of an enormous traveling crane, which picks up the coal from the unloader storage pile and distributes it over an area 715 feet in length by 315 feet wide; this 315 feet being the net available width after deducting the clearance necessary for the north and south tower tracks.

A 7-ton grab bucket, operated from a man trolley, travels along the bridge. This bucket which, together with the trolley, weighs 20 tons, is able to handle the coal as fast as the two towers can unload it, or at the rate of 300 gross tons per hour. The over all length of this structure is 603 feet, divided into a 250-foot center span and two 174 foot cantilevers, the bucket traveling at a height of 46 feet above the track level.

Electric current, obtained from a third rail, operates one 200-horse power and four 50-horse power motors, which control the grab bucket and also the bridge travel, every operation being under the control of one man, and this one man can build up a storage pile of some 225,000 gross tons, enough to supply the present plant for a year.

Fig. 62 gives a better idea of the detail of the north tower, the bucket, and also shows the relative position of the storage bridge to the unloading towers. At first glance this bucket does not seem capable of holding 7 tons, but a better idea of its size can be gained by comparing it with the man standing outside of the cab. The bucket incdidentally holds the first coal handled by the bridge.

Accidents and breaks are bound to happen even in the best regulated plant, and, to take care of urgent repair jobs as well as to turn out most of the smaller appliances required, it was thought best to erect a well-equipped machine shop, and late in 1907 work was started on the building. Fig. 63 shows the steel work up, and Fig. 64 is a view of the exterior completed.

Fig. 65 is an interior view, taken before any of the machinery was installed. This shop is now equipped to repair practically anything in connection with the mechanical operation of the plant. Standard

Fig. 67.

gauge railroad tracks run clear through the building, so that heavy parts can be delivered on cars and picked up by the electric traveling crane. A portion of the upper floor of the building is used as a storeroom, and the temporary offices for the plant are also under its roof.

One fault with an undertaking of this kind is that you cannot see everything connected with it at once. You have to walk several miles to take everything in. Fig. 66, taken in the spring of 1907, shows that considerable progress has been made in the holder work. The crown has been connected up to the top lift, and the first of the 7 guide-frame sections is already in place. Less than 2 months later, Fig. 67 shows the completed structure, ready for gas. It is quite hard to appreciate the size of this holder from any sort of a photograph, for there is nothing around it of any respectable size with which it can be compared; so, mere statements of dimensions and data, though not so convincing, must suffice. As before mentioned, the capacity of this holder is 15,000,000 cubic feet, making it the largest structure of its kind in the world. The 5 lifts are each 46 feet in height, and vary from 285 to 297 feet in diameter. The concrete tank, which has been previously illustrated, drops to a depth of 48 feet below the ground level, 300 feet diameter, and is absolutely water tight; the guide-frame, at an elevation 233 feet above the curb, gives the structure a total height of 281 feet.

Fig. 68 shows the business end of the coke barge "Nancy," the flagship of the gas navy. This barge, specially designed for coke carrying, is provided with a complete, self-unloading equipment, which will discharge coke from the hold at the rate of 67 tons per hour to conveyors at the receiving stations.

Berrian's Creek, having by this time been closed up at the east end, had become little better than a mudhole, hence it was necessary to do considerable dredging to make the west portion available for anything larger than a rowboat. The dipper dredge, seen in Fig. 69, is "eating its way" through the mud flats, which were plainly visible at low tide.

Of course, with a plant of this size and spread over such an area, it is necessary to have some method of transportation for heavy materials and supplies. Accordingly, a complete or, rather, two complete, railroad systems have been installed, providing either standard or narrow gauge service to every important building and strategic point on the property. This system consists, first, of 5 miles of standard gauge track, with all the necessary equipment of locomotives, hopper bottom and flat cars, and even an observation car for visitors who cannot or will not walk. Though not exactly railroad equipment, the standard gauge system is also provided with four 10 ton locomotive cranes, which are used principally along the dock front for loading and unloading bulky material and supplies. Then there is the narrow gauge system, having 2 miles of 36 inch gauge track, together with an equipment of locomotives, side-dumping, flat and gondola cars. This system is used chiefly for construction work around the plant. Each type of railroad is provided with track scales; three for the standard gauge of 100 tons capacity each, and one of 30 tons capacity for the narrow gauge.

The first coal gas unit is complete.

But a great amount of work still remains to be done around the property in general. During the period between the completion of the coal gas unit, and the start of the water gas buildings, the bulkhead at the coal storage area was extended 450 feet to the west, the west shore of Berrian's Island was bulkheaded and filled in, and 2,000 feet of crib and-pile dike built along the west shore of Luyster Creek, the east boundary of the property. Along the north bulkhead line of Berrian's Island a rip-rap wall was placed, this being the final step in the bulkheading of the entire shore line of 2¼ miles. However, as all the available dock front will not be required until several more units have been completed, no filling back of the cribwork was done east of the coal storage area, the intention being to bring this portion of the property up to grade with the excavated material from future buildings. During this same period, the streets and sidewalks which had been laid out around the principal coal gas buildings were graded and paved, and a complete street lighting system was installed. With the coal gas unit safely in the hands of the manufacturing department, the curtain must now be rung down for a

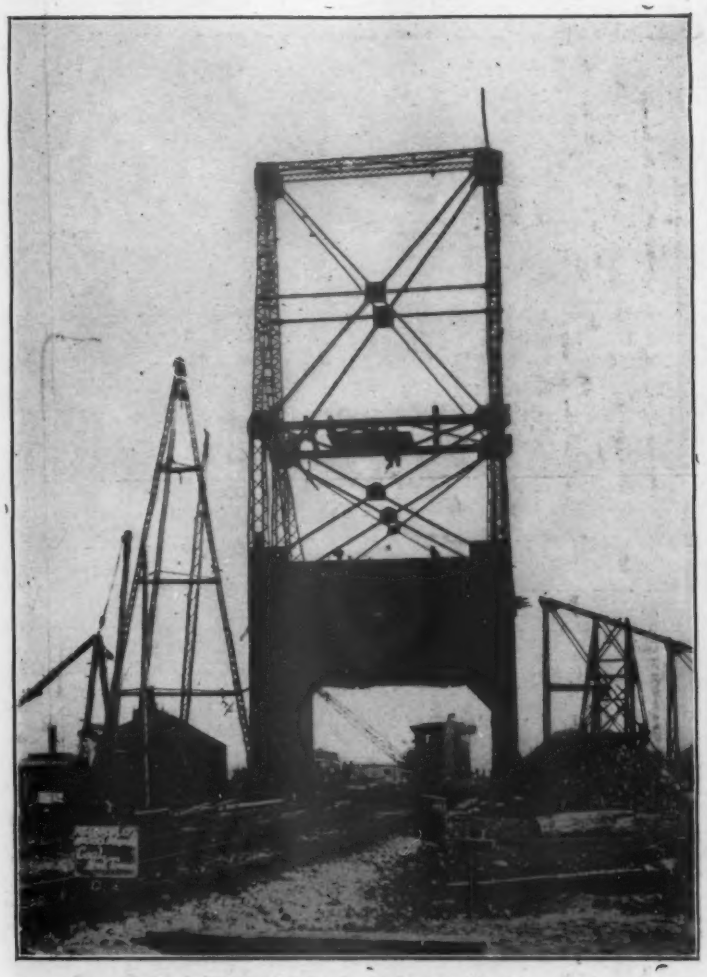


Fig. 58.

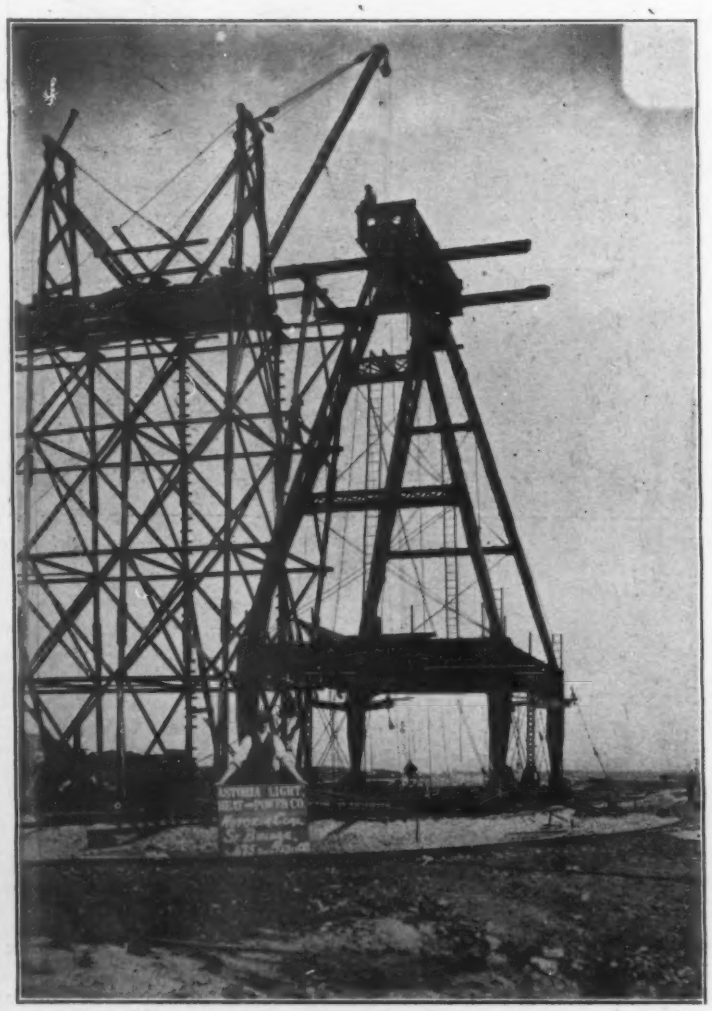


Fig. 60.

Fig. 59.

Fig. 61.

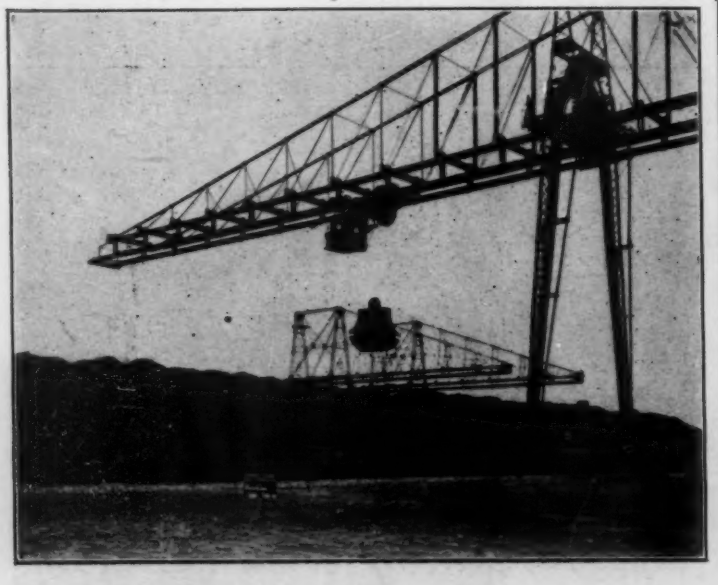
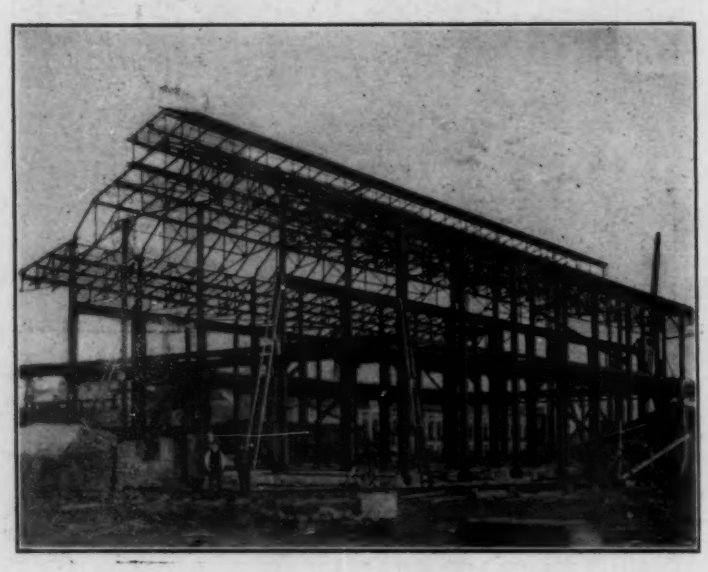


Fig. 62.

Fig. 65.



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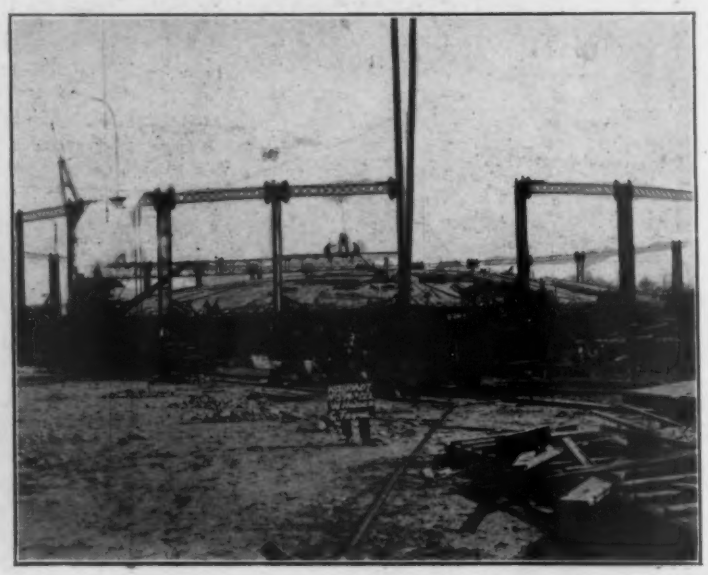

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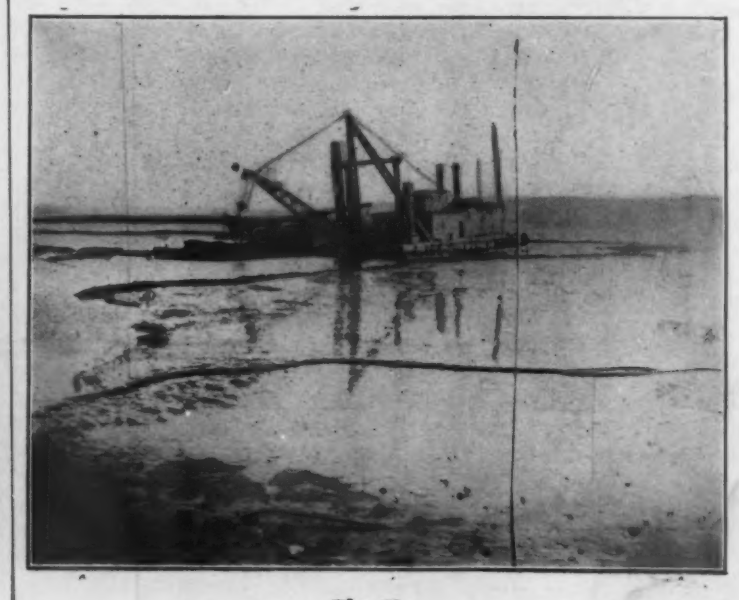

Fig. 69.

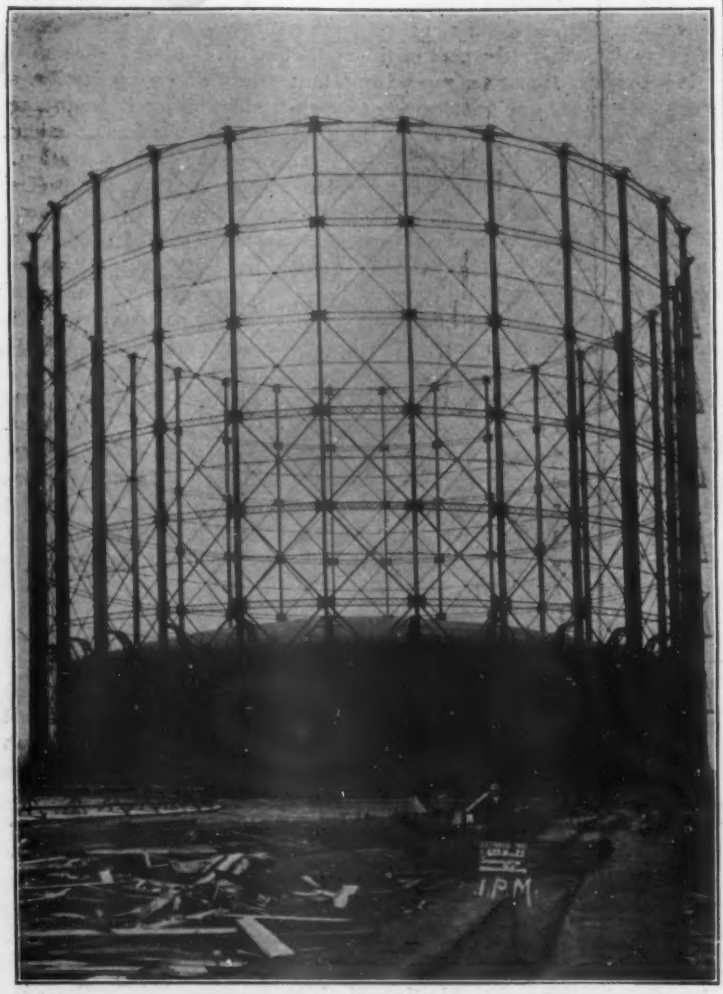

Fig. 67.

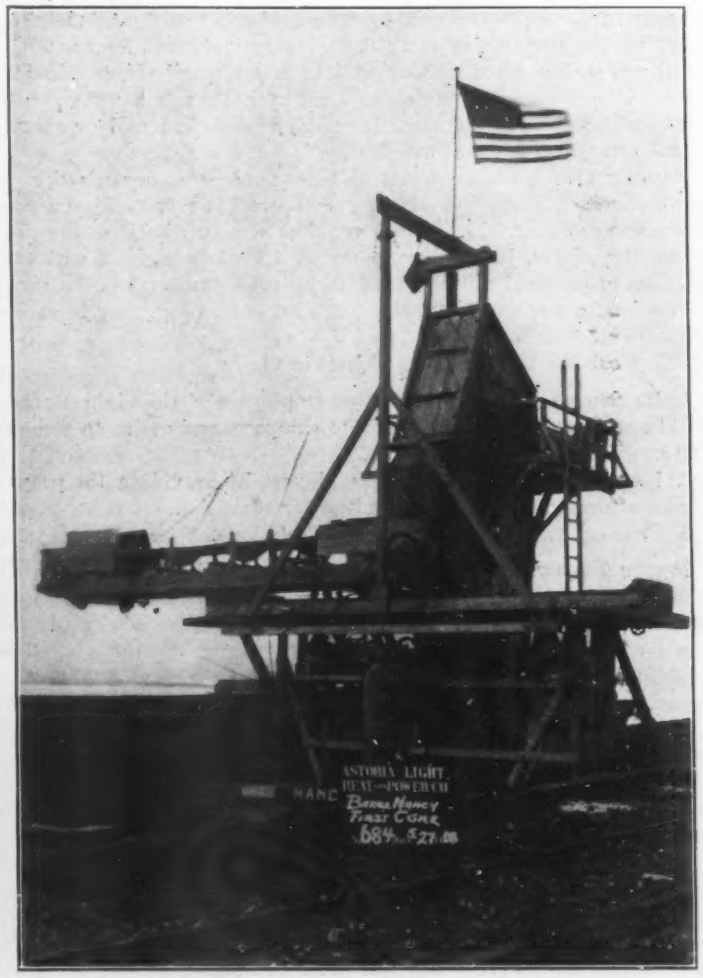

Fig. 68.

change of scene; when it rises again, the work of building the first water gas unit will have started.

Thoughts on Efficient Management.

[Prepared for the JOURNAL, by MR. D. C. BRUCE, Baltimore Consolidated Gas, Electric Light and Power Company.]

Volumes have been written on "Scientific Management." The consensus of such thought is that, to obtain desirable results, a continuous, careful research of daily routine work, as it passes through its many channels, is necessary to every industry. The foundation of successful management is organization, and the successful organization, of necessity, grows, and this constant building up necessitates the selection of new employees. It is of vital importance that these new men should be of the character and fiber that will command the co-operation of the earnest, conscientious men already engaged in the work. Good character is an essential pre-requisite to the employment of a man; for, without ambition, industry, and the ability to intelligently concentrate his efforts, he will not meet with a worthy measure of success. Frequently, time and money have been wasted in an effort to train new men without first carefully having been assured that the records of their past achievements, with quality of mind, are such as to make possible the requisite development. It requires a careful process of selection to find the men who are naturally adapted to the work to which they shall be assigned, and, after this, it is necessary they shall be thoroughly instructed respecting its details, and care taken to remove all obstacles that may retard the accomplishment of effective work. In an organization such as ours, with its large public obligations, we must be reasonably assured of satisfactory results of all plans and methods, and not until then do we approach good management.

It is not infrequently that an employee, in the pursuance of his daily work, is found to be encumbered by duties which may be entirely eliminated. A man with sufficient knowledge, and the proper faculties of observation, reveals the purport of each step of his daily routine. For example. His duties may involve the compilation of reports and the assembling of work, the usefulness of which has ceased during the development of the organization, similar data being compiled through other channels.

Efficient management comes only when all detail work has been thoroughly systematized, step-by step. A specific plan of action must be carefully mapped. Economy and efficiency result. Discipline, understanding, and the spirit of co-operation, are the prime factors in an efficient organization, and these qualities are enhanced by careful, frank and intelligent instruction of the men entering the service. Some are not only capable, but excel along certain lines of endeavor, yet, to be efficiently useful, it is necessary to have a comprehensive knowledge of the policies and methods which the company has found, through long experience, to be most direct and effective in fulfilling its obligations.

It is not sufficient that we be placed with other men doing the work which we will eventually be called upon to do. We require individual assistance to fully appreciate and understand the principles of our duties. Such specific instructions tend to round us out. It should be our endeavor to first know how to do well the work at hand, no matter how simple; and to then formulate new ideas and devise new methods for the betterment of the service. The day's work is made up of a multitude of little things. Close application to the simpler task leads those about us to rely upon the proper performance of our duties; and reliance greatly strengthens a man. Inspiration should be found in the success of those about us and should result in the advancement of suggestions and ideas which will prove useful.

Frequently cases have occurred where departments have been lacking in qualified men to take up advanced duties; and it has been found that, by closer observation and individual training, capable and valuable employees have been developed. Giving the man a chance, and giving him inspiration, uplift him to a plane of mental power, and he ceases to be a machine.

Educational opportunities are without limit. There is the oppor-

tunity for weekly meetings for the interchange of thought, the presentation of questions and enlightening answers, and the stimulating effect of the adoption of new ideas. Every advanced suggestion is worthy of serious consideration, and, though it may be impracticable, the employee should understand that, even though his ideas cannot be adopted, he is traveling in the right direction, and he should be encouraged to advance his ideas.

Nothing else is so important as to encourage an organization to think—and ask questions. Hearty co-operation results from a cordial understanding. Leadership requires a man who is at once intelligent, positive, just and sympathetic. Closely associated with this question of personal relation in a large organization lies the large field of endeavor, which, for want of a better terming, may be called "industrial betterment."

This work has the following objects in view:

1. Making all conditions such that employees of the highest grade will be attracted to the service of the company and desire to remain there.

2. Increasing the efficiency of employees by providing the proper facilities for health, and opportunities for education.

3. Creating and maintaining cordial relations.

Proper Tools and Facilities.—No element of effective management stands out more prominently for good results than the provision of proper equipment. Workmen's tools should receive systematic inspection before being given out, thus promoting good work, and often avoiding delays through the workmen not being compelled to return them to the shop for repairs.

Wagons, motor trucks and motor-cycles, as well as wagon material for fitters and linemen, should be carefully inspected and checked when drawn from stock and assembled in advance so as to avoid confusion and expensive delays.

The possibilities of new and modern equipment should be constantly studied with a view to saving time, avoiding physical strain and eliminating danger. For example, I might cite the old methods of mental addition, addressing mail, compilation of statistical data, and many other modes of procedure which have now been superseded by time and labor saving devices. The expression quoted so often that the "Present methods of working are most satisfactory, and there is seemingly no room for improvement," is certainly an evidence of lack of progressiveness.

Not long since the writer noticed a clerk's absence from his desk, due to making a great many trips up-and-down stairs. When questioned, he replied that he was obliged to personally deliver and collect his work tickets on the floor below, and it was necessary for him to converse with his fellow clerk on the subject of these tickets. To discontinue this ineffective labor required simply the installation of a small lift, which could be used for the purpose of instant communication between the two men.

Another instance may be cited. At one of our stations three men were employed, in night duty, on the work of filling material boxes with wrought iron fittings, in order that a large number of such boxes would be ready for delivery the following morning. It was determined to change the plan of this particular work from night to day. Several hundred additional boxes were secured. These boxes were then filled during the day, it being impossible to refill those in use until turned in by drivers at night. In order to add to this efficiency, a specially designed assorting table was built under a bright skylight, containing partitions for various sizes and styles of fittings which could be constantly replenished by a boy. It was found, after the first day's operation, that the same number of fitting boxes could be filled by two men as was required by three men at night. Immediately a substantial saving was assured and the advantages of competent supervision during the day made possible.

Specialization.—Constant application to certain classes of work has tended to excite in the workman the adoption of the best and quickest methods for his special line of work. This cannot be better exemplified than by the arrangement of the operating floors of the large garment manufacturers of this city who have all of one class of machines arranged to care for the first operation of the garment in close union. For example, the first 100 operators do the felling, the second 100 the seaming, and so the garment passes through the channels of specialized work until it is completed, never traversing the same ground twice. The same idea is entirely applicable to the departments of any industrial or commercial organization.

Not long since several cases were brought to light where there was considerable lost motion, due to the improper location of desks. The adjustment of this condition immediately established order, which was the beginning of efficient methods and increased possibilities for additional work on the part of the men affected.

It is evident that this most important study of centralization of work commands one's attention at every turn, making it frequently a comparatively easy matter for the alert eye to detect inconvenient, expensive and sometimes dangerous methods in the daily operation.

Co-operation.—In effecting the spirit of co-operation, we are frequently brought face to-face with conditions springing from prejudice, jealousy and egotism, and only too often we see signs of resentment on the part of the employees, when confronted with facts by fellow employees, bringing to light errors, loose methods and often proof of a total disregard for formulated plans of working as mapped out by the officials of the company. The improper acceptance of just criticism is, in most cases, due to the lack of a broad and complete understanding of the importance of co-operation and often from failure to grasp the full meaning of what an ideal co-operative spirit means. This is very often the blight of a really capable man. The success of a company depends largely upon the friendly criticism of work and the proper acceptance of advanced ideas. It is safe to say that when our minds are so narrow as to fail to properly understand the value of sincere co-operation, we become a hindrance instead of an asset to the interest we represent.

It has been said that, "To properly control one's self is to help in the control of those around us." This broadening out of mind and purpose can best be accomplished by abhorrence of the carrying of "chips." The company has no woodpile to supply epaulets for disgruntled employees. It matters little to what duties we are assigned or the station we fill, each individual part centralizes to one big hub of endeavor; namely, the public whom we serve and who must be served well. To this end the company, of which we form a part, must be bound by co-operation as a tire binds a wheel, holding together all departments for the rapid advancement of our great industry.

The Sale of Gas for Illumination.

[Prepared for the Eighth Meeting, National Commercial Gas Association, by Mr. R. F. Pierce, Illuminating Engineer, Welsbach Co., Gloucester, N. J.]

In the last analysis the essence of scientific, and all other kinds of salesmanship, consists of telling the prospective customer those things which will create in his mind a prejudice favorable to the particular article or commodity that you happen to be selling. No matter from what angle you approach the problem the solution is practically the same.

The advertising man, the new business manager, the commercial engineer, the solicitor, are all concerned in the one thing. Advertising is written salesmanship; salesmanship is often spoken advertising. That argument which will be effective on the tongue of the solicitor will also be effective from the pen of the "copy writer."

The advertising man sells goods, or assists in their sale, by arousing the interest and desire of the customer through printed page. The salesman often advertises his goods through the good impression or satisfactory service given by the goods themselves. Each must often sacrifice immediate profit for the cultivation of that intangible something which no one can describe nor value in dollars and cents, but which is pretty generally comprehended under the name of prestige—goodwill, or what not. Just as it is impossible to base the value of an advertisement upon the number of sales which may be directly traced to it, so the value of a properly executed sale cannot be estimated by the mere profit accruing therefrom according to the books.

A salesman's yearly results may net a handsome total on the right side of the ledger, yet his sales may have been of such a character, his customers so poorly advised and poorly satisfied, that it would have been infinitely better for the company had his name never graced the payroll. On the other hand, one particular sale may show no profit, or even a loss, upon the books, and still, by reason of its advertising value, the satisfaction given the purchaser, the example of possibilities set before the public, be an extremely profitable piece of business. No system of bookkeeping will give any adequate idea of the advertising value of a sale, nor of the selling value of an advertisement, no more than it can really separate the various interlocking departments of a business with regard to their relative profitabilities. The business maxim that every department must pay its

own way—stands upon its own feet—is a fine theory, and one that is very profitable to the seller of card systems, but often of doubtful utility to anyone else. In a broad sense, the important fact concerning any selling endeavor is, "Has it created a favorable impression upon the public?" If it has, it is profitable, even though a reasonably small loss may have been incurred in effecting it. If it has not made a favorable impression, it must show an enormous profit on the books before its net results may be regarded as satisfactory.

In a narrow sense this may not be true in some lines of business; but it is most certainly true with respect to gas lighting, for certainly there is nothing else which so surely excites favorable or unfavorable comment, as good or bad lighting, and nothing else in which the whims of the public play a greater part in expanding or diminishing the sale.

The solicitor is the most effective link between the company and the public. An advertisement may tell what the company claims to do, or would like to do, but the solicitor is an actual part of the company's service. He is regarded as the company's representative. If the acceptance of his recommendations by the customer leads to satisfactory results, if his promises are executed, his arguments convincing, the company's service rises on the public esteem. If confidence and enthusiasm for his product are obviously wanting, if the results obtained from apparatus purchased upon his recommendation fail to bear out his claims, the company must bear the blame.

Obviously the first duty of the solicitor is to know the requirements for satisfactory and reliable performance on the part of the apparatus which he recommends or specifies—the basic principles which are the same in every installation and under all circumstances. That, generally speaking, unscreened light sources are objectionable, that inverted burners are apt to be troublesome under wide ranges of pressure and gas quality, that upright burners are less sensitive in this respect, that high candle power sources should be placed very high where heat is apt to be objectionable—these are considerations that are practically universal in their application, regardless of the individual predilections of the consumer. If the solicitor bears them in mind he may not always secure a good installation, but he will at least avoid the most common causes of unsatisfactory ones. Beyond a few considerations of this sort, most of the elements entering into the sale and design of good lighting systems depend to a greater or less degree upon the fancy or attitude of the customer.

There is no one element that can be said to be of paramount importance. One customer will consider economy above any other feature, while another will make any reasonable sacrifice of economy to obtain convenience. In another case, daylight quality of light will be of greater importance in the customer's mind than all other considerations combined. Another will be thoroughly obsessed with the vitiation-of-air bugaboo; another by the idea that gas lighting systems inevitably contribute appreciably to bodily discomfort through heat; still another will have a particular idea concerning the design of a fixture, or a new or striking lighting effect, and refuse to consider any illuminant which does not lend itself to the working out of his ideas.

Each of the above represents a sufficient number and proportion of actual consumers to make it well worth the solicitor's time to get upon his tongue's end arguments for each and every one.

Economy being a consideration which by common consent should be relegated to the background, may be disposed of first. The actual relative cost of gas and electric lighting, averaged over the whole United States, is an unknown quantity. There are such wide differences in the quality of gas and electric service—the prices at which the illuminants are sold, the qualities of lamps and mantles used, and the excellence or otherwise of maintenance service—that any estimate is the wildest sort of guesswork. Furthermore, there are very few cities from which figures are available which enable one to compute the relative cost of gas and electric lighting, even with the stated cost for gas and current, in that particular city. Illumination measurements of actual service results are so rarely contributed to the technical periodicals that, if any really useful data exists upon this point, the writer has been unable to find it, and he has done some rather strenuous searching in this direction. Such data as has been published has, for the most part, been so violently prejudiced, either for or against gas, that it is practically useless.

Of one thing, however, the solicitors may be quite sure. Whether the comparative costs of electric and gas lighting in his particular locality be 4 to 1, or 2 to 1, or 1 to 1, he will vastly improve his chances of success (in so far as economy is concerned) by utilizing every refinement available for securing maximum efficiency. If the differential in his favor be 4 to 1, he may as well gain the benefit of all of it, rather than allow it to sink to 2 to 1, through careless design or prodigality in the use of light, while, if it be 1 to 1, he may at least gain an even break and depend upon other considerations to win the day. And in this connection it may be stated that there are gas companies successfully expanding their lighting business in localities where low-priced electric current makes electric light as economical as gas light. Part of the reason for this is that the electrical solicitor has been so confident that he has allowed himself to become lax and wasteful, while the gas solicitor, realizing the difficulty of his situation, has saved every foot of gas possible and profited by his competitor's overconfidence.

I do not mean to say that economy should ever be the principal consideration in a lighting installation, but after every *other* consideration is *entirely* satisfied, economy should receive careful attention, and every 5 per cent. clipped from the net operating cost that can possibly be spared without violating some more important requirement.

It is assumed, of course, that every solicitor is familiar with the requirements for good illumination for various classes of service, and how, roughly at least, to calculate the amounts of gas and electricity necessary to produce them. The various arbitrary methods of lighting design are useful in their place, but are by no means sufficient for the production of finished results. They are mainly useful as a basis of comparison.

For instance, just because 4-foot candles are stated to be a satisfactory illumination for a certain class of service, it does not follow that any means by which 4-foot candles may be produced in a store of this class will constitute a satisfactory lighting system. The real value of such knowledge lies in the fact that, having two different installations, each giving an average of 4-foot candles, one may gain an idea of the importance of other features which contribute toward satisfactory illumination.

A short time ago the writer passed two small stores, of equal size, side-by-side. The quality of goods displayed was practically the same; wall coverings were substantially the same in color. One was lighted by 3 inverted burners with satin-finish, prismatic glassware, and appeared brilliantly lighted. The other was lighted by 5 burners of the same size and type, equipped with clear globes, and appeared (beside the first) poorly illuminated, though all lamps were operating satisfactorily. The measurable illumination in the second store was probably somewhat in excess of that in the first, but the lighting was very much poorer, owing to the glare of the bare mantles A similar effect is often noticed when opaline globes are substituted for clear ones upon arc lamps. An actual increase in illumination appears to take place, though a decrease of 10 to 15 per cent. would be found by measurement. If the solicitor will get into the habit of carrying a notebook and jotting down the essential features of installations, for comparison at leisure, he will find that many methods of increasing economy and improving lighting effects will suggest themselves thereby. A record of the size of building number and size of lamps and equipment, height of lamps and spacing, class of service, color of walls, ceiling and woodwork, etc., together with notes concerning the effect produced, will suffice. Such records form excellent data for future reference in connection with prospective installations.

He will find that the number of watts of electricity or cubic feet of gas per hour per square foot of floor area will vary widely, even with the same arrangement and equipment of lamps installed in rooms of the same character and used for the same purpose, and in many cases the apparent illumination is no greater in the case of the one using the greater volume of gas than the one using the lesser amount, while in other cases a comparatively small increase in gas consumption produces a quite apparent increase in illumination.

In the first case the illumination had been pushed beyond the point where the eye was able to distinguish differences in intensities readily, while in the second it was well below this limit. Comparison of several installations of this character will enable the solicitor to determine the point beyond which more illumination is simply wasted, and point out many sources of economy in design which will in no wise detract from any other feature. From such data the solicitor can draw up tables of the amount of gas per square foot required for different classes of service for future guidance, that will be immensely more valuable than any published information upon the same subject, as published information is necessarily based upon averages, whereas data gathered upon the ground covers the particular local conditions. It will also afford a basis for comparisons between the

(*Continued on page* 82.)

THE AMERICAN GAS LIGHT JOURNAL

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NEW YORK, MONDAY, FEBRUARY 3, 1913.

[Official Notice.]

Forty-third Meeting, New England Association of Gas Engineers.

New England Association of Gas Engineers,
Office of the Secretary,
January 23, 1913.

The Forty-third Annual Meeting of the New England Association of Gas Engineers will be held at Youngs' Hotel, Boston, on Wednesday and Thursday, February 19th and 20th, 1913.

The meeting will be called promptly at 10 A.M., Wednesday. The programme for that day is:

Lecture on "Electrolysis," by Prof. A. F. Ganz, at 11 A.M.

Paper on "Accounting," by Mr. F. P. Royce, at 2:30 P.M.

"Notes on Chemistry of Gas Coal," by Mr. Edward F. Wilson, at 4 P.M.

Thursday.

Paper on "Coal Gas? Surely: But How?" by Mr. R. P. Brown, at 10 A.M.

Paper on "Gas Lighting," by Mr. R. F. Pierce, at 11:30 A.M.

Material for the "Question Box" should be sent in to the Secretary as early as possible.

Applications for membership should be in the Secretary's hands before February 18th.

Members will dine together Wednesday evening. Please bear in mind the importance of prompt attendance at the sessions.

All friends of the Association are cordially invited to attend the meeting.

N. W. Gifford, Secretary.

[Official Notice.]

Respecting Membership in the N. C. G. A.

National Commercial Gas Association,
Office of the Secretary,
29 West 39th St., New York, Jan. 23, 1913.

The National Commercial Gas Association, realizing the fact that, without the active support of all manufacturing interests in the gas industry and all gas companies, it cannot hope to carry on its work to the best advantage of the industry, has decided during the present year to make persistent effort to have every gas appliance manufacturer, who is at all interested in the Association and its welfare, to take out a company membership and have every gas company take out a company membership. The scale of dues applying to this class of membership is as follows:

Companies serving less than 10,000 population	$10
Companies serving 10,000 to 25,000 population	15
Companies serving over 25,000 to 50,000 population	20
Companies serving over 50,000 to 100,000 population	25
Companies serving over 100,000 population	50
Foreign companies	25
Holding companies (in the event underlying companies are in membership)	50
Manufacturing companies	25

You will note, therefore, that the individual tax is small, and, when you consider the work the Association has already done for the industry, and the work which it contemplates doing, I am sure you will not hesitate to aid this work by becoming a company member.

It is always difficult to interest an individual in any Association's affairs through the medium of a letter, and while it is hoped that this letter will bring a gratifying response from each company to which it is sent, the Association realizes that individual membership can be secured to best advantage through a personal appeal.

The Manufacturers' Committee has, therefore, decided to request each appliance manufacturer having salesmen constantly in the field to allow these gentlemen, in the course of their visits to the various gas companies of the country, to talk company membership and individual membership in the Association.

If you consent to this procedure you can readily see it will at once place in the field for the Association a body of active men who, without any inconvenience to themselves or their employers, can, at the same time, do an immeasurable amount of good for the Association. We trust, therefore, that you will agree to this request, and will so instruct your travelling representatives.

The Association last year decided that individual members, when not employees of a company member, must pay, in addition to the annual dues of $5, an initiation fee of $5. The initiation fee of $5 is waived in all cases where the individual prospective member is an employee of a company member. Under these conditions the advantage of company membership is at once evident.

Thanking you in advance for your friendly co-operation in the above suggestions, I am, Yours very truly,

Russell E. Sard,
Chairman, Manufacturers' Committee.

BRIEFLY TOLD.

Annual Award of Medals, Am. Museum of Safety.—The annual awarding of medals, by the American Museum of Safety, took place the evening of Thursday, January 23rd. The notable award this year was that of the new Rathenau medal to Thomas A. Edison. This medal, which last summer was placed at the disposal of the American Museum of Safety by the *Allegemaine Electricitaets Gesellschaft*, of Berlin, to be awarded annually for the best device or process in the electrical industry for safeguarding industrial life and health. The competition was and will be open to the world, and this affords the first instance where bestowal of high European honor was given to an American institution. The inventions for which Mr. Edison was being awarded the Rathenau medal are the result of his latest experiments with the storage battery. It stands for a recognition of the application of his storage battery in new forms with special adjuncts in relation to safety in mines, tunnels, work under water, in factories where explosives are made, powder magazines, and where explosive gases are generated or in use, General application of the storage battery in this field has reduced the hazard to workers fully 50 per cent. The Rathenau medal is well known in the European scientific world. It was presented by Dr. Emil Rathenau, President and founder of the A. E. G., the greatest European Electric Company, on the occasion of his 70th birthday, with the felicitations of the Kaiser for his services in the field of electro-technics. Rathenau is the man who introduced electric lighting into Germany; incidentally he is an old and warm friend of Thomas A. Edison. One medal is to be struck each year from the original die for the Museum to award. The "Scientific American" medal, for the most efficient safety device invented during the past 3 years, and exhibited at the Museum, was awarded to the inventors and makers of the pulmotor, the Draeger Oxygen Apparatus Company. The Louis Livingston Seaman medal, which is for progress and achievement in the promotion of hygiene and sanitation, and the mitigation of occupational disease, was presented this year to the National Cash Register Company.

The Travelers' Insurance Company medal, for the American employer, who, in the judgment of the American Museum of Safety, has done the most for the protection of the lives and limbs of workmen, was awarded to the New York Edison Company for making safer the electrical industry.

President Arthur Williams, of the Museum, presided at the exercises, and the presentations were made by Prof. F. R. Hutton, Chairman of the Jury of Awards. The departments of the Museum's activities are now; Iron and Steel, Education, Chemical Industry, Industrial Hygiene and Occupational Diseases, Illumination, Ventilation and Heating, Food and Industrial Dietetics, Water Supplies and Communicable Diseases. The officers are: President, Arthur Williams; Vice Presidents, Hon. Elbert H. Gary, T. C. Martin, Prof. Frederick R. Hutton, William H. Nichols, Charles Kirchhoff, B. B. Thayer; Treasurer, James Speyer; Secretary, William J. Moran.

Death of Mr. Gaston W. Crawford.—We regret to have to announce the passing on of Mr. Gaston W. Crawford, whose very sudden death occurred at the Hotel Hanover, Philadelphia, the morning of January 19th. Mr. Crawford, who was Travelling Sales Manager for the Baltimore Gas Appliance Company, returned to Philadelphia early the morning of January 19th, and preferring not to awaken his folks at such an hour put up at the Hotel Hanover. He had given orders not to be disturbed until noon on Sunday, at which hour a porter tried to arouse him. Receiving no response, the Manager was summoned and entrance having been made, Mr. Crawford was found dead in bed. It was determined that death was occasioned by congestion of the lungs. Deceased was in his 60th year, having been born in Dundee, Ills., January 24, 1854. His connection with the gas appliance trade dates from his connection with the Philadelphia house of Thos. Robert Stevenson, in the season of 1900. His remains were removed from Hotel Hanover to his late residence, 5451 Spruce street, Philadelphia, where the funeral services were held the afternoon of the 23d ult. He is survived by his widow, four sons and a daughter.

Time and Place of Meeting, Southwestern Electrical and Gas Association.—The Executive Committee of the Southwestern Electrical and Gas Association, at a meeting held in Galveston the third week in January, selected May 21, 22, 23 and 24, as the dates for holding the 1913 sessions. This announcement was formally made by Mr. F. M. Lege, Jr., General Manager of the Galveston Gas Company, the afternoon of the 23d ult. The sessions are to be held in the place selected as headquarters—in the modern structure known as Hotel Galvez. An interesting programme is being arranged, and our informant declares that the meeting will be at least equal to any that preceded it. And that is saying much.

Progressive Club, Brooklyn Union Gas Company, Annual Dinner.—The gas "progressives" in Brooklyn and in the suburban districts on Long Island, which are supplied with gas by the Brooklyn Union affiliated Companies, dined together the evening of Saturday,

January 25, at the Hotel Ormonde. President A. K. Klein, Assistant Manager, Com. Dept., Jamaica Gas Light Company, looked pleasant, with the other 100-odd members present for the "flash," and he continued to so look for Mr. (otherwise "Poo Bah") Howard L. Denton, the indefatigable Chairman of the Entertainment Committee, Toastmaster, etc., kept things going in good style. The entertainment included three "acts" of a number of vaudeville artists and by several speeches, and if there were a prize to be given it surely would have gone to the head table. The speakers included Vice-President A. F. Stanniford, who promised bigger and better quarters for the Club as soon as the new buildings under construction were completed. He was followed by Mr. J. M. Brock, an Honorary Member of the Club, and his story was terminated in laughter loud and prolonged. Next came Engineer R. W. Bush, whose interest in the welfare of the men is only second to the Club's founder, Mr. George W. Gatehouse, whose modesty kept him from speaking. Among the others not so affected were Messrs. Stiles and Ambler. The latter's name completed the list of those down for set speeches. The occasion was voted a great success by all present, and the session augurs well for the future prosperity and usefulness of the Club.

NINETEENTH MEETING, AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS.—Nearly 250 members and guests of the above named Association attended the annual convention, held in the Engineering Societies' Building, New York City, January 21 to 23, inclusive. The officers for 1913 are as follows:

President.—John F. Hale, Camden, N. J.
Vice-Presidents.—E. F. Capron, Chicago, Ills.; A. B. Franklin, Boston, Mass.
Secretary.—W. W. Mason, New York City.
Treasurer.—J. A. Donnelly, New York City.

A number of varied and interesting subjects were very ably discussed, but the one which is of the greatest interest to the gas fraternity was mentioned in a most unfavorable manner. A draft of a proposed bill on compulsory ventilation contained a provision that 1,000 cubic feet of air be supplied for every cubic foot of gas burned. No one discussed this point, even though the standard they are setting up calls for approximately four times as much air as the British requirements provide There are several bodies in the United States who annually clamor for compulsory ventilation laws, and probably some State will enact a statute containing some such clause as that named above. Then the gas fraternity will realize that there is something to this "ventilation hubub." Would it not be better to look into this matter on self account rather than have it later on dinned into you by those not half so well qualified to make the examination?

CURRENT MENTION—

MR. FRANK M. TRAVIS, Secretary of the Winsted (Conn.) Gas Company, has been elected Vice-President of the Bridgeport (Conn.) Gas Light Company, vice the late Dr. I de Ver Warner. Mr. Travis has acted as Consulting Engineer for the Bridgeport Company since 1908.

THE closed calendar year was the most productive one in the history of the Massachusetts Gas Companies. High records were made in the instance of both gross and share earnings, the total net having gone to $2,673,174, or about 5 per cent. on the $25,000,000 common stock, allowance having been made for interest on $9,841,000 bonds, and 4 per cent. dividend on $25,000,000 preferred. In the previous calendar year 4½ per cent. was earned on the common. The increase in net earnings to 11 per cent. represents the sum of $282,282, the greatest expansion in the previous calendar year.

ON April 7, 1913, the selling rate by the Fort Wayne (Ind.) Gas Company goes to 85 cents per 1,000 cubic feet—a concession of 5 cents.

IT is said that the plant at Paxton, Ills., will be completed by June 15th. The Tenney system is the chosen one.

AT the annual meeting of the Empire Gas and Electric Company, of Auburn, N. Y., the following officers were elected: Directors, G. W. Bowen, Irving Rouse, D. E. French, Jas. A. Seymour, E. H. Palmer, Frederick Sefton, L. G. Hoskins, H. O. Palmer and H. L. Coleman; President, E. H. Palmer; Vice President, H. O. Palmer; Treasurer, C. H. Pierce; Secretary, L. G. Hoskins.

MR. GEORGE H. CAFFREY, since 1909, Superintendent of the United Electric Light and Water Company, of South Norwalk, Conn., resigned that post some days ago in order to take up the Superintendency of the Havana, Cuba, Electric Light and Railway Company. He sailed for Havana the last Saturday in January, and should today be actively engaged in his new field of work.

THE Joseph Dixon Crucible Company, of Jersey City, N. J., a concern that never does anything in fractional way, has just issued a catalogue of its goods (crucibles, paints, lubricants, pencils, graphite, etc.), that is really a remarkable production. Over 100 pages of type, eked out with necessary illustrations, are taken up by the listings, yet this bulk had not sufficient sheets to carry the enumeratings of the entire Dixon lines, notably in respect of its almost numberless examples of pencils, the base of which is American graphite. We believe we are altogether well in accord with positive truth in asserting that the Dixon pencil more than holds its own, compared with other types manufactured elsewhere the world over—be it Germany, France, England or otherwhere. Gas men frequently have occasion to use graphite in one form or another, so we advise them to communicate a request for a copy of the catalogue to the Company's clever Secretary, Mr. Harry Dailey, Jersey City, N. J.

UP to December 31, 1912, the United Gas Improvement Company, of Philadelphia, under the royalty chapters of its agreement between the municipality, and under the leasehold by which it operates the Philadelphia City Gas Works, has paid into the city treasury the sum of $11,659,125.88. The agreement became operative in 1898.

IN our "Item" columns we note the proprietors of the Elizabethtown Gas Light Company, of Elizabeth, N. J., had instituted a net selling rate of 90 cents per 1,000 cubic feet for their Metuchen district, and to that mention we would here add that the Company has determined that the 90-cent rate shall apply to all the communities or settlements served by it. These include Elizabeth, Rahway, Cranford, Metuchen and points between. The gross rate remains at $1.25, but the discount for prompt payment is increased to 35 cents per 1,000, instead of 25 cents per 1,000.

"W.V.T.," writing from Manhansett, under date of the 28th ult., says: Dear JOURNAL: "Of course, we (the employees of the New York and Queens Gas Company) are surely (sometimes, especially towards evening, sorely) alive to the fact that Flushing and its environs are growing with a growth that is amazing, and we also know that many New Yorkers, although residents for years within mortar shot of this beautiful section, are altogether unaware of how lavish nature was to this Flushing place. But we can stand such neglect with equanimity, provided our doings as 'gas sports' are recognized. Wherefore, failing to note anything in the gas man's JOURNAL respecting our outing and eating last month, let me say this. The night of Saturday, the 18th ult., we (the aforesaid employees) had a dinner in Knab's Hall, Whitestone. Meinherr Knab served us well, and the direction of Mr. Edward Gilson (temporary Chairman) together with encouraging speeches from Mr. Maynard H. Spear, Manager of the Company, Mr. J. L. Thomas, Mr. J. M. Brock and that greatest pipe layer on or under earth—Mr. W. H. Sullivan—speeded the time and feast to the point where a permanent organization was formed. An election for officers resulted thus: Honorary President, Mr. M. H. Spear; J. L. Thomas, J. M. Brock, W. H. Sullivan and 'Eddie' Sullivan—the second greatest pipe layer on or under earth—were named as Honorary members; President, Ed. Gilson; First Vice, H. Mackay; Second Vice, John Kinne; Third Vice, H. Sumner; Financial Secretary and Treasurer, Wm. Talbot; Secretary, George Mercer; Orderly, A. Jarvis. At the termination of the election, Mr. John H. O'Brien asked for a speech from Mr. Brock. In responding Mr. Brock said that at no other time in his recollection did such a request give him such pleasure, especially in view of the source from whence it came. He was just about to make a presentation to Mr. O'Brien, as some token of their recognition of his activities in promoting the dinner and in perfecting the organization. It gave him exceeding satisfaction to present him with an elegant medal on behalf of his friends. Of course, it was with downcast eyes, shrinking mien and very low voice that poor 'O'Bie' accepted the token. In fact, 'Eddie' Sullivan remarked that the change in 'O'Bie's' usual demeanor was worth traveling miles to see. The affair was one long and well to be remembered."

THE Smiley Company, of Edmonton, Alberta, advised us by telegraph, dated the 27th ult., that it desired to hear from manufacturers of all sorts of appliances for use on or with natural gas. It declares that being in position to push sales of such devices (particularly meters of the slot and regular types) asks for correspondence in respect to the establishing of agencies. It alse asks for the immediate mailing of literature respecting the matter in question.

Correspondence.

[The JOURNAL is not responsible for the opinions expressed by correspondents.]

Mr. Burdick on the Letter by Mr A. S. B. Little

ELECTRIC BOND AND SHARE COMPANY,
71 BROADWAY, N.Y., Jan. 27, 1913.

To the Editors AMERICAN GAS LIGHT JOURNAL: The letter from Mr A. S. B. Little, published in the January 27th issue of the JOURNAL, prompts me to call your attention to a possible typographical error therein. He states that "Ferox" will purify 40,000 cubic feet of gas per bushel. Is it not possible that he meant 400,000 cubic feet per bushel, otherwise a comparison between our figures, referring to this particular point, speaks for itself.

All of the figures as to capacities, etc., published under the caption "Some Notes on Purification of Gas," will be found conservatively accurate. The limit of "at least 40 per cent." of free sulphur was indicated as the low (not the high) limit of allowable sulphur in serviceable sponge, and as a warning against the too frequent custom of discarding useful oxide containing less than 40 per cent. of sulphur. The writer has used homemade sponge until it contained 67 per cent. of free sulphur; but the case was exceptional and the economy rather doubtful.

I have at various times received pamphlets on (and samples of) the Consolidated Gas Purification and Chemical Company's products, including "Ferox," which they kindly sent me, and I can say unreservedly that I admire the energetic and progressive advertising and business methods employed by their able Manager, but I stand unequivocally back of the statements and data in "Some Notes," etc.

The reference to the Osler theory was very apt, but as Dr. Osler outlived his self-assigned period of usefulness, without resorting to the chloroform bottle, so may a purifying material be employed far beyond a given limit and still perform its functions in a desultory and uneconomical manner. Yours very truly, R. H. BURDICK.

(*Continued from page* 79.)

relative economies of competitive illuminants under the conditions of service existing in his own city. He will often be much surprised at the difference between what he had expected in this respect and what he actually finds. He will also locate some of the leaks in his own designs which sometimes enable a clever electrical competitor to replace gas by electricity, and show an actual saving in operating cost for equally satisfactory service.

In some cases the customer will assert that he wishes his place of business smothered in light, regardless of cost. Under such circumstances it is obviously foolish to pare down illumination intensities too closely; but at the same time it is well to take the customer's statement with a grain of salt. Remember that what he wants is the appearance of brilliant illumination, and that he is perhaps quite willing to obtain it at the least possible cost. Don't push the illumination above the limit which your experience shows you can be appreciated by the eye. Furthermore, remember that the poorest way to obtain the effect of brilliant lighting is by the use of unscreened mantles. The customer may be attracted by their glare, and imagine that he wants them, but you may be sure he will tire of them quickly after finding that they fail to produce the desired effect. Besides, there is a humanitarian obligation.

Strive to give your customer all the value you can for the money he is willing to spend. When changing from a wasteful to an economical system, seek to improve the lighting rather than to reduce the bill. A glaring instance of how not to do it comes to mind in this connection. A gas solicitor called upon the proprietor of a moving picture theater, the front of which was studded with incandescent electric lamps aggregating 1,600-candle power and costing 60 cents per hour to run, with a proposition to demonstrate the power of *two* gas arcs (aggregating, say, 600-candle power and costing, say, 3 cents per hour) to drown the place in light. As the place was already light as day, the effect of the gas arc was hardly perceptible, and quite naturally the theater owner did not feel inclined to appropriate even 3 cents per hour for nothing. If, instead of 2 gas arcs, the salesman had possessed the requisite nerve to suggest 20, his chances of success would have been much better. This may appear to be a rather wild statement to some of you, but there is at least one city in which an arc campaign for outside lighting is being prosecuted where installations are running as high as 20 lamps in point of ordinary mercantile buildings.

About the greatest mistake one can make is imagining that because a thing has never been done it cannot be done. Nine-tenths of the so-called impossible things are simply things that have never been tried.

For many classes of work the superior daylight color value of the incandescent gas lamp places it in a class by itself. In this respect the tungsten lamp is a very poor second, indeed. This feature alone may be made to swing the lighting of a haberdashery, rug, or fur store for gas. Perhaps you have occasionally noticed, in passing a haberdashery, a clerk coming to the door with some fastidious customer who wished to select his cravats by daylight. There is a good prospect for gas lighting. A personal inquiry among several haberdashers in one city brought out the fact that all those using gas held the opinion that it was far superior to electric light for color matching. These opinions were not inspired in any way, the writer merely asking why gas light was used instead of electricity, and sometimes asking if there were any noticeable difference in color matching value between the two. In every case the proprietor stated that his conclusions were the result of personal observation, and that no salesman of gas lamps had ever called the matter to his attention.

We hear a great deal about the limitations of gas lighting and the hopelessness of attempting to introduce it into stores of the highest class, yet one of the most exclusive men's furnishing stores in one of the leading cities in America is lighted by gas solely for color matching value. The building is a new and very elaborate one up-to-date in every particular. The proprietors have spared no expense in any direction, and the economy of gas lighting would not entitle it to a moment's consideration in this instance. While we are acknowledging the limitations of gas lighting, is it not worth while to consider whether the principal limitations may not really be our own?

The hygienic features of gas lighting need only sufficient publicity to insure general public acceptance to become a very effective argument for the use of gas lighting. Under the present practice a large proportion of lighting is done by unscreened sources. Of these, the incandescent gas mantle, though bad enough, is far less obnoxious than the carbon filament electric lamp, and infinitely superior to the tungsten filament.

Thus, as far as average ordinary practice is concerned, incandescent gas lighting may be claimed as far more favorable to the health of the eye than any of the electric lamps. Giving prominence to this feature in the advertising and sale of gas for lighting will create a definite and positive prejudice in favor of gas lighting that can hardly be measured in dollars and cents. The same may be said of the influence of gas lamps in promoting ventilation and circulation of the air and in sterilizing the air through the cremation of bacteria in the bunsen flame.

These facts have been well established by tests of undoubted impartiality and authority, yet, due to lack of publicity, the general public entertains opinions quite the opposite. The fallacy of the vitiation of air by gas lamps still persists, thanks to insistent and effective publicity from the other camp. There is no reason in the world why such hygienic considerations as come up in connection with illuminants should not be definitely advantageous to gas.

We read a great deal and write a great deal upon this subject, but somehow display a marvelous reticence on the subject, as far as the general public is concerned. In some States the vitiation-of-air fallacy has received legal recognition, and factory inspectors have, in at least one instance, forbidden the use of gas lighting upon this basis. It is time that some drastic corrective was applied.

Generally speaking, the customer who requires unique lighting effects and elaborate fixture designs is inclined toward the opinion that electricity is the only illuminant available. Too often the gas company has favored the installation of a single or, at most 2 or 3 types of lighting units in an effort to standardize lighting practice and simplify purchasing, stock keeping, and maintenance to the last degree. This is precisely what the consumer does not want. Merchants particularly wish to obtain fixtures and lighting effects which shall be distinctive. Anything commonplace is taboo. Often the more progressive merchant even likes to change his lighting system every few years on general principles. Fashions in lighting change as rapidly as fashions in dress, and success in the sale of illuminants to the more discriminating trade lies in keeping up to date, rather than in attempting to force upon the public such stock systems as may recommend themselves.

There are very few lighting problems, even of the most elaborate sort, that cannot be solved in a satisfactory and even admirable manner with gas. The only obstacle is public prejudice, for the most part without a definite foundation. Certain mechanical difficulties exist, but they are by no means insurmountable. Too often the amount of skill necessary to design modern lighting systems is underestimated; but the provision of properly equipped men for the handling of these problems will always greatly increase the amount of this business gained by the gas company.

Very often the general public believes that the more elaborate lighting fixtures are not available for use in connection with gas lighting. When this opinion exists it will usually be found that the public has never had an opportunity to purchase, or even see, fixtures of the best grade. There is at least one company showing and selling in its display room fixtures up to $200, and glassware for individual mantle burners up to $9 per piece. The average price of fixtures sold by this company is $25. When this company first decided to stock fixtures of similar grade to the best electric fixtures it was necessary to have them made to order, on account of the opinion of manufacturers that there was no market for gas fixtures of this sort.

The sale of high grade fixtures is simply a matter of having them to sell. In hundreds of instances the sole reason for the displacing of gas by electricity is the difficulty of obtaining artistic fixtures for gas lighting, or, what amounts to the same thing, the customer's notion that gas fixtures are not to be had in more elaborate styles.

A strenuous effort to secure the installation of the better types of fixtures is well worth while. Some special concessions to builders of renting houses and apartments, in order to insure the placing of attractive fixtures suitable for incandescent burners, will gain many customers for gas lighting who would otherwise go to electricity.

Where straight gas fixtures cannot be sold, the installation of combination fixtures should be urged. Half a loaf is much better than no bread. Every gas outlet is a possible source of revenue, and the more outlets the greater the revenue. In fact many companies find it more profitable to push combination fixtures in preference to straight gas fixtures, as the former are easily sold in many places where the sale of the latter would be extremely difficult, and once

combination fixtures are installed the obvious merits of gas lighting will insure its use in most cases.

In connection with existing fixtures designed for open flame tips, the solicitor should urge the use of upright burners. These, when equipped with well selected glassware, harmonize with the lines of the fixture and are capable of producing really pleasing effects.

On 3 and 4 light fixtures in residences, the so-called miniature burners, consuming about 2 feet of gas each, are preferable to the larger sizes. When the latter are used, only one will be lighted, and the effect will be anything but pleasing. The customer will be much more likely to light all lamps on a 3 or 4-light fixture, provided they are of low gas consumption. In residence lighting economy is of minor importance, and an artistic but efficient fixture will almost invariably be preferred to an ugly but economical one. The solicitor should strive, first of all, for pleasing effect, and subordinate every other consideration to this. The means at his command are many, but demand discrimination in their use. Amber mantles are preferable for residence lighting, and for many classes of commercial lighting, such as restaurants and cafés of the better sort. The customer should be encouraged to purchase and use the particular sort of lamp, mantle, and glassware that will contribute to the pleasing effect of the lighting as a whole.

The solicitor should be supported in his efforts by a competent designer, able to display not only technical skill, but good taste and mechanical ingenuity as well.

The raising of the general plane of gas lighting should not be regarded as a merchandizing proposition to be judged by its immediate capacity for showing profits. It is a most effective advertisement of the possibilities of gas lighting, meriting especial attention and, if necessary, some sacrifice for its consummation. Lighting is an art rather than a cut-and-dried commercial proposition, and upon the recognition of this fact depends the future of gas lighting.

New York Public Service Commissions' Orders Respecting Gas Pressure in Certain Districts of Kings and Queens Counties.

The Public Service Commission, First New York District, has handed down an order establishing gas pressure regulations applicable to companies furnishing gas for light, heat or power in the counties of Kings and Queens, save the 31st Brooklyn Ward, which embraces Coney Island. The consumption there is, of course, greatest in summer, and the exception is now made until the Commission can make observation of the conditions prevailing during the summer season, following which proper regulation will be advised for that section. The order for the Borough of Brooklyn was directed to the Brooklyn Union, the Flatbush, the Kings County Lighting and the Brooklyn Borough Gas Companies. It provides that the named corporations shall, by August 1, 1913, install recording pressure gauges, so located that no consumer shall be over 3,800 feet from a gauge, and that there shall be at least 1 gauge to each square mile. After December 1, 1913, the Companies are ordered to maintain a minimum of 2 inches (water column) on 2 consecutive days, save for Wards 26, 29, 31 and as to all these Wards, save 31, the like requirement is made except where the service comes from a main located previous to the date of the order in an ungraded street or in a street not opened by the city, in which case a minimum pressure of 1½ inches is allowed. This concession extends to December 1, 1915, after which date the minimum of 2 inches will be required. The maximum pressure after December 1, 1913, for all of the above territory, except the 31st Ward, shall not exceed 6 inches, water column, on 2 consecutive days. After December 1, 1913, the maximum daily pressure variation shall not exceed 3 inches, water column, on 2 consecutive days, and after December 1, 1916, it shall not exceed 2 inches, water column. After September 1, 1913, the maximum momentary pressure variation shall not exceed a total range of 8 inches water column, which after May 1, 1914, is limited to 5 inches, water column. The order for the Borough of Queens applies to the Richmond Hill and Queens Borough Gas Company, the Jamaica Gas Light Company, the Newtown Gas Company, the Woodhaven Gas Company, the Astoria Light, Heat and Power Company, the East River Gas Company, of Long Island City, the New York and Queens Gas Company and the Queens Borough Gas and Electric Company. The provisions of this order are generally the same as those of the order covering the Borough of Brooklyn (Kings county). A minimum pressure of 2 inches, water column, is prescribed after December 1, 1913, for the 1st and 5th Wards; also for the 2d, 3d and 4th Wards, except that a minimum of 1½ inches is there allowed on account of ungraded or unopened streets. The maximum pressure after December 1, 1913, is limited to 6 inches, water column, the maximum daily pressure variation to 3 inches, diminishing to 2½ inches after December 1, 1914, and 2 inches after December 1, 1915. The provisions for momentary pressure variation are the same as in the Brooklyn order.

New Methods and Appliances.

Locating Hidden Pipes by Means of the Wireless Principle.—The *Journal of Gas Lighting*, in its issue for mid-January, describes a device (yclept the "Wireless Pipe Locator,") which it is asserted will readily show the position of any concealed or underground gas, water, steam or other pipe, whether covered with concrete, earth, boards, snow or ice. The "Locator," as shown in the illustrations, consists of a special form of vibrator and induction coil, mounted in an oak box, provided with space for the necessary battery, as shown in Fig. 1. This part of the apparatus is designed to produce the necessary current on the lost pipe. A specially constructed detector coil with receiver is provided for tracing the circuit. The operation of the instrument is very simple; and any average workman can use it. It is well known that a conductor carrying an electric current is surrounded by an electric field. If a coil of proper construction is brought within this field, a current will be induced in the coil; and if this is connected to a telephone receiver, the effect will be manifest by a tone produced therein. The nearer the coil is brought to the conductor, the louder will be the tone. The "Locator" has been designed to produce a current of such strength that, if connected to a pipe as the conductor, the operator may trace the pipe by means of the detector coil and receiver.

To use the instrument, all that has to be done is to attach the two outgoing terminals to the two ends or positions between which the hidden pipe or main is known to exist, and all between these points is in such a state of electrical agitation that the coil of wire is readily affected by the magnetic field produced by the interrupted current supplied by the batteries. The telephone receiver, being attached to the ends of the coil of wire, is set to work by the induced current in

Fig. 1.

Fig. 2.

the coil; and the result is a buzz, which is strongest in the nearest position to the main or pipe. There is no difficulty in following the noise if the operator starts investigating from the position where the instrument is connected.

In Figs. 2 and 3 the method of locating a lost pipe is shown. *A B*

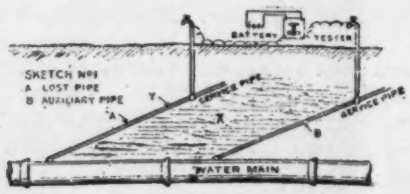
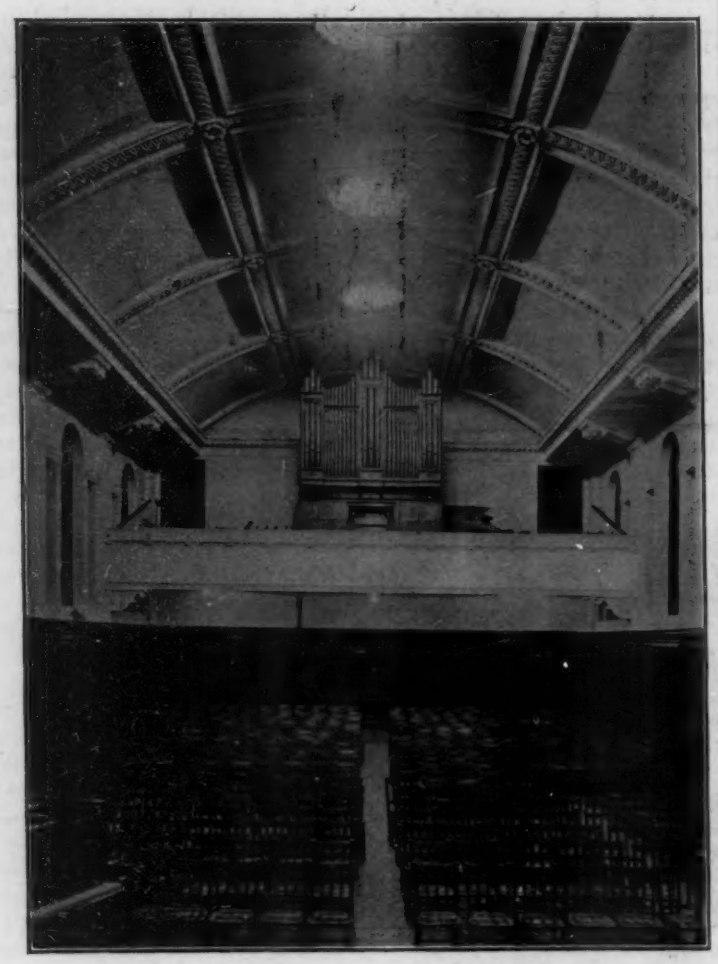


Fig. 3.

(Fig. 2) are the service pipe, of iron and lead; also the stop box or cut-off, covered by grass. *C* is the main in the street; and *X* is the field. Suppose it is not known to which main the service pipe is attached to supply the house on the corner lot. The circuit is formed by connecting the instrument—one side to the sill cock and the other to the fire hydrant. On closing the battery circuit, the current will flow as shown by the arrows. The man in the foreground can hear the tone anywhere in the field formed by the pipes and the wires; but in passing over the service pipe or main an abrupt change in the tone is noticeable. By stopping where this change takes place, the operator will be standing nearly directly over the pipe.

Lead or iron pipes can be traced through a building without any disturbance of plaster, boards or anything else: and, as already intimated, there need no longer be any opening of roads to trace a main or a service pipe. These advantages should commend the "Locator" to the attention of gas and water engineers on this side the Atlantic.

An Expressive Example of a Hall Lighted by Low Pressure Gas.—In a recent number of the *Illuminating Engineer* (London, England) an interesting example of a large hall lighted by low pressure gas was given. This hall, it is stated, is in the Leeds' Training College, and is 97 feet in length, 28 feet in breadth and 34 feet in height. The lighting is accomplished by means of 4 "Nonpareil" sunburners. These lamps utilize a ring of 28 low pressure, inverted



burners, each of which consumes 2.8 cubic feet per hour. Each lamp is said to have an aggregate candle power of 2,100, and four of them are used to light the hall.

The lamps are placed high up on the ceiling, and also serve to assist ventilation of the room. The illumination at the level of the seats is given as 8-foot candles, which is quite exceptionally high for a hall of this kind. In addition the arrangment of the lights high up on the ceiling is regarded as a method of avoiding "glare."

Cleveland Section No. 3, "The Gas Meeters."—On September 23d, 1912, a number of the employees of the East Ohio Gas Company, Cleveland, organized a club for the purpose of bringing together the employees of the different departments, and helping to create a better spirit of good fellowship and friendliness between these, so that the members of the operating departments would get to better know the members of the sales' force and office staff, all of these plans tending to help increase the efficiency of any organization.

The club was not given any particular name at the time of its organization, but since it was decided upon to have the members meet every other Friday night, to bowl together, it became known as a "Bowling Club." During the convention of the N. C. G. A., at Atlanta, early last December, it was suggested that we reorganize the club and make it a section of the "Gas Meeters." That proposition was favorably reported on at a meeting held later on in December. On the 16th of that month the club was reorganized and officially designated as Section 3, at which time the following officers were elected:

Commissioners.—F. R. Hutchinson (Chairman), C. D. Halford, C. Riordan.

Secretary-Treasurer.—Wm. Holtz.

This section of "The Gas Meeters" is now in flourishing condition, and each bowling night every member is assessed 60 cents to help pay the expenses of the alleys (eight in number) which are reserved exclusively every other Friday night for the club. The amount of the assessment more than pays the expenses and the surplus is set aside for future entertainment.

On the night of January 23d the club held its first dance, which was attended by not only nearly every member of the club, their wives and sweethearts, but some of the friends or acquaintances of the members as well; 150 all told.

The favors given the ladies were boxes of chocolates, and the gentlemen were given a bronze combination ash-receiver and matchbox holder, the part holding the box of matches being made to represent the casing of a gas meter. These were very kindly furnished gratuitiously by one of the meter manufacturers. The accompanying illustration shows 56 of the members, the photograph having been taken in the alley on a regular bowling night.

A New Electric Tachometer or Speed Indicator.—The Brown Instrument Company, and the Keystone Electrical Instrument Company, of Philadelphia, Pa., are placing on the market a new electric tachometer or speed indicator, to accurately indicate, or record on a chart, the revolutions per minute of a rotating shaft or wheel. There are many operations where with an accurate speed indicator it is desirable to have the device permanently connected to an engine or machine, and to show at a glance the speed at which it is running, or to keep a constant record of this speed on a chart for the 24 hours.

The electric tachometer has the advantage of not only being exceedingly accurate, but that the indicating or recording instrument can be located at any desired distance from the shaft, the speed of which is to be measured. The instrument consists of a small magneto

or generator, particularly designed for use with tachometer, and which generates 25 volts at 1,000 revolutions per minute. On account of the voltage generated, an instrument, absolutely dead-beat in operation, can be supplied. Instruments have been particularly designed by the above-named Companies of unusually high resistance, exceeding 3,000 ohms in each instrument, so that the length of leads connecting the magneto or generator and the indicating instrument have no effect on the readings; and, also, one, two or three instruments can be connected to the same generator without affecting the indications. This high resistance feature is exceedingly advantageous, for oftentimes, after the generator and one indicating instrument have been installed, it is desirable to place a recording instrument in the office or other convenient point, and this can be connected to the generator without recalibration of the instrument.

Fig. 1 shows the Standard Brown Electric Tachometer, generator, leads and indicating instrument, as usually supplied, while Fig. 2

Fig. 1.

Fig 2.

represents a group of instruments connected to a generator driven by sprocket and chain, two indicating instruments and one recording instrument being connected to the same generator to both indicate and record the speed at three different points.

It is desirable with many machines to operate them at a certain speed to produce the best results; as, for instance, in large machine tools it is desirable to know the cutting speed, and, by use of this electric tachometer, mounted beside the machine the exact speed can be noted at all times, and maintained as desired.

At all blast furnace plants, where gas or steam blowing engines are in use, it is necessary to run them at a constant speed so that a certain number of cubic feet of air per minute can be blown into the furnace. The revolutions per minute in cases such as this are of exceedingly great importance, and, with the Brown electric tachometer, with one indicator mounted near the blowing engines, on the engine itself, or on a switchboard nearby, and with a recording instrument (if desired) in the master mechanic's office, a perfect regulation and record of the speed can be secured.

Many tests have constantly to be made where an electric tachometer of this character will prove particularly advantageous. As an instance one might cite the locomotive tests which are run by several universities and the larger railroads which have testing departments in which the speed of the driving wheels can be readily determined.

Another use of this electric tachometer is on war vessels and merchant ships, where it is particularly desirable to not only indicate the speed of the propeller shaft in the engine room, but also frequently in the chart house and on the bridge. In the case of the United States battleships the small generator is driven by gears, direct from the main propeller shafts, and three indicating instruments are connected to the one generator to indicate the speed at various points about the ship. This is particularly desirable in maneuvering, where a space of say 200 yards must be maintained between each ship. If the ship in the rear is gaining on the forward one, by signalling for one or two revolutions slower speed, the desired position can be maintained.

This new electric tachometer, which has some radically improved features over anything on the market heretofore, will doubtless prove most interesting to anyone who desires to secure an indication of the speed or a constant record on a chart, and the above Companies will be glad to send a copy of a new bulletin, describing the Brown electric tachometer, to anyone who is interested.

Recent Patent Issues.

Prepared for the American Gas Light Journal by Royal E. Burnham, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 20 cents.

1,050,328. Igniting Gas Burners. C. F. Arnhorst, Chicago, Ills.

1,050,333. Apparatus for Recording the Speed of Gases. M. Bouffart, Herstal-lez-Liege, Belgium.

1,050,646. Automatic Gas Cut Off. M. L. Grove, Tylersburg, Pa., assignor of one-half to W. Aray and one-sixth to A. Foy, same place.

1,050,756. Gas Mixing Burner. E. H. Wright, Quincy, Mass.

1,050,851. Safety Gas Burner. C. E. Rymes, Toronto, Canada.

1,051,016. Gas Washer. P. G. Schmidt, Olympia, Wash.

1,051,071. Copper Back Reflector Gas Heater. P. M Bradley, Little Rock, Ark.

1,051,072. Heater. P. M. Bradley, Little Rock, Ark.

1,051,177. Gas Generating Apparatus. A. H. Welch, Anderson, Ind., assignor of one-third to A. R. Friedmann, and one-third to L. C. Lambert, same place.

1,051,314. Gas Generator. M. Davicion, Paris, France.

1,051,367. Gas Burner. E. H. Fisher, Pittsburgh, Pa., assignor to Scientific Materials Co., same place.

Items of Interest
FROM VARIOUS LOCALITIES.

"Gas," writing from Springfield, Mass., under date of the 24th inst., thus unbosoms himself:

Dear Journal: At a very well-attended meeting this week of the employees of the Worcester (Mass.) Gas Light Company, Mr. Hodgeson, of the New York division of the General Gas Light Company, talked quite to the point respecting how to care for the Humphrey arc. Mr. Charles E. Blood, Eastern representative of the Humphrey Company, followed with an illustrated narrative regarding how to secure new business with the Humphrey arc. Cigars were in evidence *ad lib.*, and were courageously puffed. Both speakers seemed

to have found favor with their hearers, for the echoes of hearty applause were terminated in votes of thanks to each.

"H. R. H.," writing from Hagerstown, Md., some days ago, informs us that the second annual banquet of the employees of the Hagerstown Light and Heat Company was this year held in the Boyer House, where 50 covers had been laid by Mr. Boyer, which covers (and their succeeding dishes) kept warm viands served according to a *menu* that was varied and lengthy, and the splendid flavor of these was all the better appreciated through their having been cooked in Host Boyer's all-gas kitchen, the service of which is vastly well appreciated by Mr. Boyer, whose clever hostelry by-the-way is well and favorably known through all this section of Maryland. The Toastmaster was Mr. A. H. Campbell, and a capable one he certainly was. Messrs. J. C. Lane and Albert Heard delivered interesting addresses on the duties and responsibilities of the Company and its employees to the public, and Secretary H. L. Lane followed with a short speech emphasizing the necessity and value of fraternal feeling on the part of the employees to themselves, to the public and to the corporation. The speech of the evening, however, was that by Manager Marshall M. Milton, the prevailing thought of whose discourse was loyalty, without which all concerted effort is vain. The fly in the ointment was the absence of Supt. E. B. Spielman, who is happily ending in satisfactory manner a tussle with illness. All the other officers attended the banquet, and the out-of-towners included Mr. J. Vanden Bout, of the Hanover (Pa.) Gas Company, and Mr. E. J. Crun, of the erecting force of the U. G. I. Company.

THE fourth annual convention of H. M. Byllesby & Company, and its affiliated Companies, which had been fixed for January 23 and 24, has been set over until a date to be named in June next. This action was taken on account of certain important matters now underway that would prevent the attendance this month of some of the officials and several managers of local properties.

WE are informed that Mr. H. L. Fowler, who recently resigned the post of Manager to the St. Albans (Vt.) Gas Light Company, to assume the duties connected with the management of the Dover (N. H.) Gas Light Company, will remain on the Board of Directors of the first named corporation.

MR. WM. T. LINCOLN, of South Norwalk, Conn., was to assume the foremanship of the Holyoke (Mass.) Municipal Gas Works, last Saturday, vice Mr. F. W. Case.

AT the annual meeting of the Portland (Me.) Gas Light Company the following results were reached: Directors, Wm. H. Moulton, W. W. Thomas, Fred. U. Dow, Elias Thomas, Patrick H. Connolly and Herbert Payson; President, F. U. Dow; Vice-President, William H. Moulton; Treasurer and Clerk, Burton Smart.

MR. N. J. GARRISON, Auditor of the Fort Smith (Ark.) Light and Traction Company, has been appointed Auditor of the Western States Gas and Electric Company, with headquarters in Stockton, Cal. Prior to his departure for his new field of work, the employees of the Fort Smith corporation tendered him a farewell dinner.

THE Public Service Commission handed down a decision some days ago in the instance of the lengthy proceedings brought before the Commission to fix rates that might be "properly" charged for gas and electric currents in Baltimore. Under the decree the Baltimore Consolidated Gas, Electric Light and Power Company is ordered to establish a gross rate of 90 cents per 1,000 cubic feet, a discount of 10 cents to be allowed on all bills paid within 10 days after the rendering thereof. The Company is further ordered to file with the Commission, on or before June 1, 1913, a schedule of large quantities rates, based on the volume used each month, such rates to be subject to approval of or revision by the Commission. The new electric current rate is 8½ cents per kilowatt hour, the minimum monthly charge being put at $1.

ALTHOUGH 1912 was not a particularly brisk business year in and about Oklahoma City, Okla., the figures returned by the officers of that hustling concern, known as the Oklahoma Gas and Electric Company, respecting its trading in the twelvemonth noted, certainly go to show that the named corporation enjoyed a prosperous and expanding year. The books of the gas division of the enterprise show a net gain of 854 consumers; 682 gas ranges were added; also, 679 water heaters and 771 other smaller heating devices were put in use. The electrical division showed a net increase of 341 consumers; and the connected kilowatt load was increased by 1,048.

DR. SKELTON has disposed of his ownership in the Okmulgee (Okla.) Gas Company to Messrs. Payne and Bryan, of Titusville, Pa.

THE Omaha (Neb.) Gas Company's report to the City Council, for the year ended December 31, 1912, showed that during the year the gas sales amounted to 786,775,896 cubic feet, of which 712,023,496 cubic feet were subject to the annual royalty of 5 cents per 1,000 cubic feet. The Company reported $6,747.07 occupation taxes, which tax was paid under protest.

ON the first inst. a new schedule of selling rates became effective in Kankakee, Ills., when the Public Service Company, of Northern Illinois, put forward the following: Under 5,000 cubic feet per month, $1; 5,000 to 10,000, ninety cents; 10,000 to 18,000, eighty cents; 18,000 and over, seventy cents. These rates are contingent on the payment of gas bills within 10 days from presentation.

"R. V. B.," writing from Portland, Me., under date of the 25 h inst., declares that the annual banquet of the employees of the Portland Gas Light Company, which was brought off, the evening of the 22d ult., in Riverton Park Casino, was a right, smart affair. Four special cars carried the party, and when the travelers got out of the vehicles, and ranged themselves around the "festive board," the things that were down to Manager Smith's well prepared, bountiful and well-served meal were many; not a viand escaped. Going on with his narrative our correspondent, declares: "During the dinner the Zarita stringed orchestra rendered high-class music. When cigars had been put in action Treasurer Burton Smart gave the signal for 'order,' and, remarking that while it was not usual to have set speeches at these gatherings, he nevertheless was certain that a word or two from Col. Dow, the Company's beloved President, would be acceptable. The Colonel said he had been reminded they were celebrating the 63d anniversary of the Portland Gas Light Company, and he was certain that, since as it grew older it grew stronger, there was good reason for believing that 63 years from now it would only be emerging from its callow days. He congratulated the men over their good work, and complimented them on their fealty, and desired them all to remember that their interests were indissolubly reciprocal. The speech was received with an outburst of applause, and it was still re-echoing when Mr. Smart remarked that Mr. C. E. West, who looked as if he had something of importance on his mind, wished to address them. That gentleman stepped to the head table, and, in matter-of-fact way, presented to Col. Dow (by this time some of the employees had advanced with a case that evidently contained something of a weighty nature) a token of their regard for him. The handsome leather case, all ready to fit on the automobile body, contained thermos bottles, knives, forks, spoons, plates, napkins—in fact everything needed along these lines to complete the pleasures of a prolonged touring car voyage. Mr. West terminated his speech by wishing the Colonel a long, long life. The boys then cut loose again, and it was well over 3 minutes before the surprised Colonel could utter a word. However, he did finally thank them heartily for their very useful testimonial. Then Mr. Smart led the way into the assembly hall, in which a prettily grouped and adorned stage gave suitable coigne of 'vantage to the talent who completed the evening's entertainment by clever work along, solo, dancing, pantomine and monologue lines; in fact, a first class vaudeville entertainment was provided, 95 per cent. of which was rendered by the Company's talent. We understand that your Consolidated Gas Company, in New York, has a very clever monologist in the person of Mr. Oscar H. Fogg; but let me say we have a similarly named person (similar as to the last name, but quite different as to the first, in that our Fogg's initial name is Rebecca), who can at least stand him off for cleverness. In fact her rendition of 'Dot Time when Honey done Got Loss,' is as clever a bit of work as any ever brought off by Astoria Fogg."

MR. DEWIT CLINTON, City Treasurer, Collector of Taxes and Treasurer of the Sinking Funds, Worcester, Mass., has sent in his resignation respecting these duties to the City Council. Immediately on the appointment and installing of a successor he will take up the

tasks going with the dual position of Treasurer-Secretary to the Worcester Gas Light Company. Mr. Clinton has served the people of Worcester in the several capacities above named since 1907. Further his election to these municipal works was unanimous each year.

In some unaccountable way the rumor became so wide, as to take on the appearance of fact, that the Boston Consolidated Gas Company had determined to recall all the slot meters outstanding. Towards the close of last month, however, the Company issued circular notices to its consumers, printed in English, German, Italian and Hebrew, conveying the information that, despite all the intimations or assertions to the contrary, the Company would not recall the slot meters; and the circular further emphasized the fact that consumers are responsible for the money placed in the meters, and that the users thereof should not permit anyone, other than the uniformed officials of the Company to examine the meters in any way.

Talk about "Eating your cake, and having it!" That canny disposition and hope are beautifully exemplified in the contention made by Representative Essex S. Abbott over the new gas rate for Haverhill. The Board of Gas and Electric Light Commissioners recommended that the Haverhill rate should be put at 80 cents per 1,000 cubic feet, and the Company either has or will accept the same. Under the old policy the Company charged 85 cents to 90 cents net, adding 10 cents more per 1,000 when bills were not settled within specified times. Now Essex S. Abbott asserts that the 80 cent order means a gross rate subject to the operation of the old plan for prompt payment. Not so fast, "Essex S." This is a case where the pound of flesh practice rules. The Company will want, and will get, every nickel hereafter; the figure obtainable being so close to cold storage rates as to preclude the possibility of a drop of active blood being discoverable in the carcass as the latter is served per order of the Commissioners. No, "Essex S.," the people will get their "pound" of gas at the rate specified in the order.

Mr. A. P. Ewing, Assistant General Manager of the Detroit City Gas Company, with the approval and consent of General Manager Butterworth, has announced many changes in the various subdepartments of the corporation: H. J. Hood, from Assistant Purchasing Agent to Purchasing Agent; and 5 employees in the New Business Division have been given the title of Assistant Superintendent, in charge of the named sub-divisions: Arthur J. Murray, in charge of Reflex burners, Pintsch gas and gas irons. Fred. W. Schmelz, arc lights and instantaneous water heaters. A. A. Treadway, industrial hotel and power installations. Francis S. Hughes, special street illuminating campaigns. F. B. Toupalik, special investigations in new buildings. R. C. Fowler, Gen. Supt. of Advertising. Newell E. Loomis, Supt. of Coke Sales. Wm. H. Kratzer, Chief Clerk, New Business Department.

At the annual meeting of the Metuchen (N. J.) Gas Company it was decided to reduce the gross selling rate from $1.40 per 1,000 cubic feet to $1.20, prompt payment (within 15 days) to bring into action a discount of 25 per cent. The election resulted in these choices: President, Mr. Patrick Convery; Vice-President, Mr. Robert Carson; Manager and Cashier, Mr. Truman T. Pierson.

According to the last semi-annual report (July 1 to Dec. 31, 1912) of the Detroit City Gas Company, the gain for the 6 months, as compared to the quantities sent out in the corresponding 6 months of 1911, figures at something over 12 per cent. The respective quantities were: Latter half of 1911; output equaled 1,882,982,300 cubic feet; latter half of 1912; output equaled 2,208,316,500.

A correspondent in Herkimer, N. Y., writing under date of the 25th inst., says: "Gas for heating and lighting is to be furnished to residents of East Syracuse by the Syracuse Suburban Gas Company, which was incorporated in Albany earlier this week by Messrs. Louis Burkhard, Wm. Schug and O. R. Evens, of East Syracuse. Last April the Company secured a franchise from the Village Board, and it was now before the same body asking for the right to lay 6½ miles of mains under the surface of the streets. Options have been obtained on land whereon to construct the plant, which will be ready to operate by October 1st. The maximum rate may not exceed $1.50 per 1,000 cubic feet. This plant is certain to be built—although some suggested that a holder station and main system, arranged to take gas from the Syracuse Company, might be eventually agreed upon—and it is certain that it will pay from the start, since no less than 300 residents (the place has a population not far from 4,000) have signified their purpose of having their houses hooked up to the main system."

At the organization meeting for current year, of the Guelph, Canada, Light and Heat Commission, Mayor Carter was chosen Chairman. At the instance of Manager Hegg it was decided to reduce the minimum charge per month to 25 cents per month, instead of 50 cents, and the $1 charge for setting meters ($1) was abolished altogether.

At the annual meeting of the Alton (Ills.) Gas and Electric Company, the officers elected were: Directors, J. W. Beall, G. L. Estabrook, T. W. Gregory, C. C. Haynes, M. D. Hopkins, A. S. Purinton and O. S Stowell; President, O. S. Stowell; Vice-President, L. C. Haynes; Treasurer, O. S. Stowell; Secretary and Asst. Treas., T. W. Gregory.

At the annual meeting of the Galveston (Tex.) Gas Company, many important plans for the betterment of its properties were outlined, and a plan for putting same into operation this season, was arranged. The Company's business for the past twelvemonth was done on a very satisfactory basis, and President Sealy intimated that the current state of trade betokened a large gain for 1913. The Directors elected were: John Sealy, H. J. Runge, R. W. Smith, Jno. C. Walker and Sealy Hutchings. The Board subsequently perfected the following organization: President, John Sealy; Vice-President, R. Waverly Smith; General Manager, Fred. M. Lege; Treasurer and Secretary, Chas. S. French.

With exceeding satisfaction we are enabled here to confirm an earlier tentative report that its prior owners (Jas. R. Murphy, of Greenville, and H. W. Williams, of Oklahoma City) have disposed of their ownership in the Greenville (Tex.) Gas Company, the purchaser being that enterprising gas man, Mr. J. R. Cullinane. He proposes not only to put the manufacturing plant in proper shape—which, of itself, will cost quite a bit of money—but also to extend the main system by the placing of several miles of pipe. Mr. J. R. Ellis, another capable man, is to have local charge.

At the annual meeting of the shareholders in the Slatington (Pa.) Gas Company, the Directors elected were: W. L. Jones, Jos. Richards, R. G. Pierce and W. H. Gangeware; Secretary, Henry Graflin; Superintendent, Winfield Roper.

At the annual meeting of the shareholders in the Hartford City (Conn.) Gas Light Company, the Directors elected were: Jno. T. Robinson, E. B. Bennett, Sylvester C. Dunham, S. R. Bertron, F. R. Cooley, Jas. H. Knight, Geo. Roberts and Jno. B. Hills, and the Directors later on named the following executives: President, Ed. B. Bennett; Vice-President, Geo. Bullock; Secretary-Treasurer, Jno. A. McArthur; Assistant Secretary, Jno. T. Robinson; Assistant Treasurer, W. A. Kneeland; General Manager, Benjamin W. Perkins.

The scheme of betterments on the plant of the Tampa (Fla) Gas Company includes a considerable addition to the purifying apparatus. The contract for the boxes, and connections complete, was awarded to the Gas Engineering Company, Trenton, N. J.

On the 28th ult. the shareholders in the Baltimore (Md.) Consolidated Gas, Electric Light and Power Company, in special meeting convened, authorized the Directors to take steps to retire preferred stock, aggregating $6,360,054 par value, and convert the same into common stock.

"B. B. V.," writing from Syracuse, N. Y., under date of the 24th ult., informs us that the jury, in the case of the Rochester (N. Y.) Railway and Light Company, against one Frank Hayes, of 11 Byron street, Rochester, tried this week before Judge Hebbard (Municipal Court), declared: That where there is a difference between the volume of gas registered as being used through a slot meter, and the sum of money found in the money box, the loss must be borne by the Lighting Company.

A bill now before the New York Legislature aims to establish the following selling rates in the 5th Queens (N. Y.) Ward—this territory includes the Rockaways (East, Far, etc.): 1913, $1.25; 1914, $1.20; 1915, $1.15; 1916, $1.10; 1917, $1.05; thereafter, $1. That looks a fair scheme.

The Market for Gas Securities.

The market for local gas shares, during the week, was dull and neglected, with the result that prices were lower, although only a shade. It is a wonder that a more decided slump did not occur in view of the figures submitted at the Consolidated's annual meeting, which was held the 27th ult. The total earnings from the Company's gas business for 1912 are returned at $2,629,188.26, the equivalent of 3.32 per cent. on the "Value of tangible and intangible property employed in the manufacture and distribution of gas sold by the Company." However, the "affiliated Companies" returned to the treasury the sum of $5,988,990, which enabled it to pay 6 per cent. to its shareholders, and carry to surplus $1,536,699.06—especially the .06—as against a surplus of $1,562,887.60 for 1911. The undistributed surplus earnings from all sources reached the great total of $4,728,759.72. The "Profit and Loss" shows the comfortable sum of $12,614,558.77, to credit. The technical section of the report is admirable; in fact, in the long term of time that the writer has been reading such documents, not one to compare with it for clearness, perspicacity, simplicity and coherence, can be remembered. The total output of gas in the twelvemonth reached the imposing total of 29 thousand millions cubic feet—an increase over last year equalling 3.86 per cent. The gain in electric output represented an increase of 22.37 per cent. There were in use at the end of the year 875,017 gas meters, and the electric meters numbered 221,361. The kilo-watt hours respecting electric current sales numbered 407,966,066. Taxes of all sorts footed up the great sum of $3,533,529.73. Additions and betterments called for a total expenditure of $12,547,962.92. The street lighting service comprised a total of 46,730 lamps—24,758 incandescent gas; 122 open flame gas; 10,419 electric arcs; and 11,431 incandescent electrics. These excerpts are sufficient to show the vast scale on which the Company operates.

Brooklyn Union is lower, at 137½ to 138; Lacledes are a bit firmer; Peoples, of Chicago, shows no change; and Washington (D. C.) remains as before.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

FEBRUARY 3.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$99 816,500	100	137¾	138
Central Union Gas Co.—				
1st 5's, due 1927, J. & J.	$5 [illegible],000	1,000	103	105
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	105	106
Mutual Gas Co.	3,600,000	100	172	177
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	101	102½
New York & Richmond Gas				
Co. (Staten Island)	1,500,000	100	59	63
1st Mtg Gold Bds. 5 p. ct.	1,500,000	—	98½	100½
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	103	105
Con. 5's, due 1945, J. & J.	1,500,000	—	96	100
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	99½	101
Standard	5,000,000	100	60	70
Preferred	5,000,000	100	90	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	103	105
The Brooklyn Union	15,000,000	1,000	137½	140
1st Con. 5's, due 1948, M. & N.	15,000,000	—	105¾	107
Yonkers	299,650	500	120	—
Out-of Town Companies.				
Ba State	50,000,000	50	½	⅝
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	500,000	1,000	97	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	59	60
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed				
Gold Bonds	7,500,000	1,000	104	105¼
Essex and Hudson Gas Co.	6,500,000	—	133	136
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co.,				
1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of				
New Jersey	10,500,000	—	130	133
" Bonds, 5's	10,500,000	—	101	106
Indianapolis	2,000,000	—	38	45
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	290,000	1,000	91	
Kansas City Gas Light Co.,				
of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	3,822,000	1,000	98½	99
Laclede Gas Co., St. Louis.	10,000,000	100	103½	104½
Preferred	2,500,000	100	90	102
Bonds	10,000,000	1,000	102½	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	120	120
Madison Gas and Electric Co.				
" 1st Mtg. 6's	400,000	1,000	106	
Massachusetts Gas Companies, of Boston	25,000,000	100	91¾	92½
Preferred	25,000,000	100	92	93
Montreal L. H.& P., Canada	2,000,000	100	286½	286¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	97	98
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	5,000,000	25	182	190
Peoples Gas Lt. & Coke Co.,				
Chicago	25,000,000	100	115¾	116¼
1st Mortgage	20,100,000	1,000	102	102½
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
Pacific Gas and Electric Co.	15,500,000	—	60	61
St. Joseph Gas Co.—				
1st Mtg. 5's	1,000,000	1,000	96	98
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	105
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	3,447,000	1,000	94	96
Syracuse Gas Co., N. Y	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
Washington (D. C.) Gas Co.	1,600,000	200	427½	430
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	—	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, Richmond, Va., October 15-17, 1913. Officers: President, W. R. Addicks, New York City. Secretary, Geo. G. Ramsdell, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting Sept. 1913. Officers: President, Arthur Hewitt, Toronto, Ont.; Secretary and Treasurer, John Keillor, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, New York City, Oct. 8, 1913. Officers: President, C. G. M. Thomas, Long Island City, N. Y.; Secretary, C. H. B. Chapin, 29 W. 39th street. New York City.

Gas Meters.—Monthly Meetings; New York Section, Chairman, Will W. Barnes; Secretary, H. Thurston Owens, 42 Pine street. Philadelphia Section; Chairman, L. R. Dutton; Secretary, H. F. Patterson, Jr., 833 Chestnut street. Cleveland Section, Chairman, F. R. Hutchinson; Secretary, Wm. Holtz. East Ohio Gas Co. New England Section, Chairman, F. M. Roberts, Haverhill; Sec., F. K. Wells, 60 Broad st., Boston.

Guild of Gas Managers of New England.—Annual meeting, March, 1913. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, March 19th and 20th, 1913. Chicago, Ills. Officers: President, H. O. Channon, Quincy, Ills.; Secretary-Treasurer, Horace H. Clark, 115 No. Oak Park avenue, Oak Park, Ills.

Illuminating Engineering Society.—Annual meeting,———— September, 1913. Meetings of Sections, monthly. Pres., Preston S. Millar; General Secretary, J. D. Israel, 29 W. 39th street, New York City. Sections: New York, Secretary, C. L. Law, 124 West 42d street. New England, Secretary, H. C. Jones, 10 High street, Boston, Mass. Philadelphia, Secretary, L. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, J. B. Jackson, 26 North Market street. Pittsburgh, Secretary, J. C. Mundo, Oliver Building.

Indiana Gas Association.—Annual meeting, March 12 and 13, 1913. Indianapolis. Officers: President, Howard L. Olds, Indianapolis; Vice-President, Wm. Wallace, Lafayette; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, May 22, 23, 24, 1913; Burlington, Ia. Officers: President, C. W. Fair, Atlantic, Ia.; Secretary, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, October—— 1913. ———— Officers: President, L. O. Ripley, Emporia, Kas.; Secretary and Treasurer, W. H. Fellows, Leavenworth, Kas.

Michigan Gas Association.—Annual meeting, September——1913: ———— Officers: President, W. S. Blauvelt, Detroit, Mic; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1913; Mexico, Mo. Officers: President, P. A. Bertrand, Joplin, Mo.; Secretary and Treasurer, P. W. Markham, Brookfield, Mo.

National Commercial Gas Association.—Annual meeting and gas show, Dec. 1-6, 1913 Philadelphia, Pa. Officers: President, C. W. Hare, Philadelphia Pa.; Secretary, Louis Stotz, 29 West 39th street, New York City.

Natural Gas Association.—Annual meeting, Cleveland, O., May 20 22, 1913; Officers: President, M. B. Daly, Cleveland, O; Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, February, 19th and 20th, 1913 Boston. Officers: President, D. D Barnum, Worcester, Mass.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—Annual Meeting April —, 1913, ———— N. J.—President, William H. Pettes, Newark, N. J.; Secretary-Treasurer, Arthur H. Osborn Belmar, N. J.

Ohio Gas Association.—Annual meeting, February ————, 1913, Columbus, O.; President, John M. Garard, Columbus, O.; Secretary, L. B. Denning, Columbus, O.

Oklahoma Gas, Electric and Railway Association.—Annual meeting, Oklahoma City May, ——1913. President, F. W. Caldwell, Shawnee, Okla.; Secretary, H. V. Bozell, Norman, Okla.

Pacific Coast Gas Association.—Annual meeting, San Jose, Cal., September 16, 17, 18, 1913. Officers: President, Henry E. Adams, Stockton, Cal.; Secretary-Treasurer, Henry B stwick, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, York, Pa., April 9-11, 1913; Officers, President, H. H. Ganser, Norristown, Pa.; Secretary-Treasurer, W. O. Lamson, Jr., West Chester, Pa.

Society of Gas Lighting.—Annual meeting Dec., 11, 1913; monthly meetings, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 29 West 39th street, New York city

Southern Gas Association.—Annual meeting, Charlotte, N. C., April 18-20, 1913, Officers: President, C. E. White, Montgomery, Ala.; Secretary-Treasurer, E. D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. May 21, 22, 23 and 24, 1913, Galveston, Tex. Officers: President, F. M. Lege, Jr., Galveston, Tex.; Secretary H. S. Cooper, 405 Slaughter Bldg., Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May 14 and 15, 1913. Milwaukee, Wis. Officers: President, L. F. Wortendyke, Janesville, Wis.; Secretary-Treasurer, Henry Harmon. Milwaukee, Wis.